

# PQI IN ACTION



**USE OF RASBURICASE (ELITEK®) FOR  
TREATMENT OF TUMOR LYSIS SYNDROME**



**NCODA'S POSITIVE QUALITY  
INTERVENTION IN ACTION**

# INTRODUCTION

In an effort to promote higher quality patient care NCODA created the NCODA Positive Quality Intervention (PQI) as a peer-reviewed clinical guidance resource for healthcare providers. By providing Quality Standards and effective practices around a specific aspect of cancer care, PQIs equip the entire multidisciplinary care team with a sophisticated yet concise resource for managing patients receiving oral or IV oncolytics. This **PQI in Action** is a follow up to the **Use of Rasburicase (ELITEK®) for Treatment of Tumor Lysis Syndrome** PQI and explores how the Medically Integrated Teams at Southern Oncology Specialists and St. Elizabeth Healthcare incorporate PQIs as part of their daily workflow. This article will discuss how utilizing the **Use of Rasburicase (ELITEK®) for Treatment of Tumor Lysis Syndrome** PQI elevates patient care.

Southern Oncology Specialists has four locations in the Greater Charlotte area of North Carolina. They have providers and infusion suites at every location and one central specialty pharmacy. Their goal is to serve their patients by delivering compassionate, personalized care that surpasses their expectations.

St. Elizabeth Healthcare has six facilities currently operating throughout northern Kentucky and Southeastern Indiana. They provide advanced surgical, radiation, and medical oncology services. Their team of cancer experts includes surgical, medical and radiation oncologists, medical physicists, registered radiation therapists, clinical pharmacists, certified oncology nurses, social workers, registered dietitians, pastoral care staff and many others.

We would like to thank Sanofi Genzyme for their support of this initiative.

# THE PARTICIPANTS

## ***Southern Oncology Specialists*** ***Greater Charlotte Area, NC***



**Caroline Heys, PA-C**  
Physician Assistant



**Wayne Woodbury, RPh**  
Pharmacy Director



**Deon Stafford, CPhT**  
Pharmacy Technician



**Matthew Kotlove, MD**  
Medical Oncologist



**Stephanie Herro, APRN, AOCNP**  
Inpatient Medical Oncology  
Nurse Practitioner



**Alicia Gesenhues, PharmD, BCOP**  
Oncology Pharmacy Clinical Coordinator



**Mollie Beck, PharmD, BCOP**  
Oncology Clinical Pharmacist



**Ashley Rhodes, RN**  
Inpatient Oncology Charge Nurse

# DEFINING MEDICALLY INTEGRATED PHARMACY AND THE POSITIVE QUALITY INTERVENTION

**M**edically Integrated Pharmacies (MIP) are a type of service model in which patients receive oral and IV therapies at the site of care with their doctor and are managed by one staff; state-of-the-art pharmacy services are built within the oncologist's office that help to deliver timely and ongoing care as part of a single, multidisciplinary team. Complexity of cancer treatment has recently increased with a growing number of both oral and IV therapies which are delivered across an often-confusing, payer-driven healthcare system. Various treatment settings including community, institutional, and academic centers have made successful efforts to transition to this integrated service model to maintain continuous care of the patient and achieve the best possible clinical outcomes.

Empowered with innovative tools like the PQI, the Medically Integrated Teams have improved the quality of care delivered at their institutions through adoption of NCODA resources. These leading oncology organizations value the PQI which provides concise, clinical guidance information to raise the standard of care across all the professional disciplines. In general, PQIs afford attention to any critical aspect of drug therapy that may be easily overlooked ("if you see 'x', remember to do 'y'"). In a world where new and novel treatments arise almost daily, healthcare professionals need an easy-to-use reference to enact the key clinical principles for each therapy. The PQI serves that need.

## THE USE OF RASBURICASE (ELITEK®) FOR TREATMENT OF TUMOR LYSIS SYNDROME PQI

**R**asburicase (ELITEK®) is an FDA-approved intravenous medication indicated for initial management of plasma uric acid levels in pediatric and adult patients with leukemia, lymphoma, and solid tumor malignancies who are receiving anticancer therapy expected to result in tumor lysis and subsequent elevation of plasma uric acid.<sup>1</sup> The **Use of Rasburicase (ELITEK®) for Treatment of Tumor Lysis Syndrome PQI** gives the multi-disciplinary team a concise resource for identifying appropriate dosing of rasburicase based upon uric acid levels and managing and educating patients on rasburicase.

The PQI is divided into sections and begins with a Description followed by the Background, PQI Process, Patient-Centered Activities, and Supplemental Information sections. Southern Oncology Specialists Pharmacy Director Wayne Woodbury, RPh shares, "PQIs are true tools for collaboration. All of our practitioners are able to use it in conjunction with patients when providing patient education. Nursing staff and clinical staff are able to use it to refer and refresh themselves on what they need to be looking for in terms of reactions to therapy. Pharmacy staff uses it for supplemental patient counseling and monitoring parameters."

**"PQIs ARE TRUE TOOLS  
FOR COLLABORATION."**

Wayne Woodbury, RPh



**St. Elizabeth Oncology Clinical Pharmacist Mollie Beck, PharmD, BCOP, counsels a patient.**



# COLLABORATION IS KEY

The healthcare landscape has changed dramatically in the last 20 years and the clinician operating in isolation is now seen as undesirable.<sup>2</sup> The inter-professional collaborative practice model requires healthcare professionals from different disciplines to collaborate in providing the highest quality service to patients and families.<sup>3</sup> Incorporating multiple perspectives in healthcare offers the benefit of diverse knowledge and experience, and a high-functioning team is an essential tool for building a more patient-centered, coordinated, and effective healthcare delivery system.<sup>2</sup> Team member relationships and the degree of their collaboration can influence the quality of service they deliver as well as the professionals job satisfaction.<sup>3</sup> The oncology team plays a vital role in providing high quality patient care with positive outcomes. Pharmacy plays an important part of the team in both of our participating practices.

**“THE PHARMACISTS ARE EXTREMELY DILIGENT ABOUT ENSURING THAT LABS ARE APPROPRIATELY TIMED AND ACTUALLY OBTAINED, WHICH DOES REQUIRE PERSISTENT FOLLOWUP. THEY ARE CRUCIAL IN TERMS OF MAKING SURE THE SET PLAN AND PROTOCOL IS IN PLACE, BUT ON TOP OF THAT THEY ARE ALWAYS THERE FOR PHYSICIAN QUESTIONS, IF WE HAVE TO CHANGE PLANS OR IF THERE ARE ADVERSE EFFECTS THAT WE NEED TO MANAGE.”**

Matthew Kotlove, MD

Matthew Kotlove, MD is a medical oncologist at St. Elizabeth Healthcare who practices in the hospital and clinic setting. He works with the pharmacy team extensively in both settings. He shares that pharmacists “help close the loop of communication” amongst staff members and “provide a lot of



**Southern Oncology Specialists pharmacy technician Deon Stafford, CPhT prepares medication for a patient.**

personalized and dedicated education to patients.” He adds “the pharmacists are extremely diligent about ensuring that labs are appropriately timed and actually obtained, which does require persistent followup. They are crucial in terms of making sure the set plan and protocol is in place, but on top of that they are always there for physician questions, if we have to change plans or if there are adverse effects that we need to manage.”

**“I THINK HAVING A PHARMACIST IN THE OFFICE HELPS ME KEEP OUR PATIENTS SAFER.”**

Caroline Heys, PA-C

Caroline Heys, PA-C sees patients and supports the physicians at Southern Oncology Specialists. Having access to a pharmacist in the office is important to her for drug interaction questions, dosing questions, and other drug information concerns. She comments, “I think having a pharmacist in the office helps me keep our patients safer.” She continues and shares that Woodbury has been formally trained in pharmacology and knows all of the drug interactions. She feels this helps provide better care.

# THE PQI DESCRIPTION AND BACKGROUND

The first two sections of the **Rasburicase (ELITEK®) for Treatment of Tumor Lysis Syndrome** PQI are the Description and Background. The Description gives the purpose of the PQI, which is to identify appropriate dosing of rasburicase based on uric acid levels.<sup>4</sup> The Background then gives the indication of rasburicase as mentioned earlier and additional important information on the drug and its dosing.

Tumor Lysis Syndrome (TLS) can occur with the initiation of cytotoxic chemotherapy, cytolytic antibody therapy, and radiation therapy in malignancies that have a high proliferative rate, large tumor burden, and high sensitivity to chemotherapy. This initiation can cause the rapid lysis of tumor cells. This leads to the release of massive quantities of intracellular contents into the bloodstream and can result in hyperuricemia. This can lead to precipitation of uric acid in the renal tubules which may cause renal insufficiency or failure.<sup>5</sup>

The Background section explains that rasburicase breaks down uric acid that has already formed in the body and allopurinol prevents the formation of additional uric acid. The two medications work concomitantly to actively decrease el-

evated uric acid levels while also preventing hyperuricemia in the future.<sup>4</sup> Following this explanation is the chart below that lists the risk stratification of patients for TLS based on Type of Malignancy, adapted from Coiffier and colleagues.<sup>4,5</sup>

The background section also discusses the dosing of rasburicase. The FDA approved dosing is weight-based and is 0.2 mg/kg as a 30-minute intravenous infusion daily for up to 5 days.<sup>1</sup> The PQI gives information on studies that have evaluated the use of single, fixed doses of rasburicase and discusses potential 3 mg and 6 mg flat doses.<sup>4</sup> St. Elizabeth's Oncology Pharmacy Clinical Coordinator Alicia Gesenhues, PharmD, BCOP points out that this is one area where pharmacists can really be utilized and make a difference in patient care. She shares that the pharmacists at her institution help "if there are cost containment strategies, just like with rasburicase. We will go to primary literature and help with new drug updates. The world of oncology moves so fast that without a pharmacist we wouldn't be as fruitful and would not deliver the highest quality of care to patients." She also shares that St. Elizabeth uses the flat dosing of either 3 mg or 6 mg depending on the uric acid level.

## TLS RISK STRATIFICATION<sup>4,5</sup>

Type of Malignancy	High Risk	Intermediate Risk	Low Risk
Non-Hodgkin lymphoma (NHL)	Burkitt lymphoma	Diffuse Large B-Cell Lymphoma (DLBCL)	Indolent NHL
Acute lymphoblastic leukemia (ALL)	WBC ≥ 100,000	WBC 50,000 – 100,000	WBC < 50,000
Acute myeloid leukemia (AML)	WBC > 50,000, monoblastic	WBC 10,000 – 50,000	WBC < 10,000
Chronic lymphocytic leukemia (CLL)	Venetoclax (lymph node > 10 cm or ALC > 25,000 and lymph node > 5 cm)	WBC 10,000 – 100,000 Fludarabine Venetoclax (lymph node 5-<10 cm or ALC ≥ 25,000)	WBC < 10,000 Venetoclax (all lymph nodes < 5 cm and ALC < 25,000)
Other hematologic malignancies (chronic myeloid leukemia, multiple myeloma) and solid tumors (small cell lung cancer)	—————	Rapid proliferation with expected rapid response to therapy	Remainder of patients

# THE PQI PROCESS

**T**he Use of Rasburicase (ELITEK®) for Treatment of Tumor Lysis Syndrome PQI Process section provides guidance for the team on the steps to take surrounding a patient order for rasburicase. The first step in the Process is to confirm the patient has an order/prescription for allopurinol. Woodbury says when counseling patients on therapy his team tries to ensure the patient has received the allopurinol prescription. He shares, “our protocol calls for the two to be initiated together so we want to make sure the patient does have it in hand.” He adds, “if the patient is receiving it from our pharmacy it is easier to manage but sometimes insurances require that patients choose their preferred pharmacy or patient preference; we want to do what is most reasonable and comfortable for the patient, but we also want to make sure they are taking the allopurinol as prescribed.”

In addition to confirming the allopurinol, the team also should confirm the patient is maintaining adequate oral hydration or is initiated on IV hydration. St. Elizabeth Inpatient Oncology Charge Nurse Ashley Rhodes, RN comments on the ease of hydration when a patient is inpatient. The team can administer the fluids and the patient is typically connected to fluids for 24-48 hours and also normally has some type of fluid going throughout the duration of their chemotherapy treatment as well. She also shares it is important to make sure the patient is “keeping track of their intake and output, especially if there are visitors coming in and out and bringing them things.” Woodbury shares that at Southern Oncology Specialists it is common for patients to come in between treatments for hydration and they stress the need for patients to make the team aware of any signs of dehydration. Heys shares the practice builds fluids into their regimens, as well as oral intake recommendations.

The next step of the PQI Process section is to obtain baseline and follow-up TLS labs (potassium, serum creatinine, uric acid, phosphorus, calcium, lactate dehydrogenase) pre- and post-rasburicase administration.<sup>4</sup> According to Dr. Kotlove, St. Elizabeth performs all of these labs and the frequency of the checks depends on the clinical context. St. Elizabeth Oncology Clinical Pharmacist Mollie Beck, PharmD, BCOP agrees and shares she usually recommends labs to be drawn every six to eight hours, depending on the patient. The further the patient gets from treatment the less frequently the labs will be drawn. Southern Oncology Specialists also schedules lab visits and Woodbury comments “we want to make sure the patients understand they will need to have follow-up lab

values drawn, so when giving our patient education we reiterate that they will be required to come in for lab values.” He said their team does not want patients to see the lab draws as visits that they may not need to keep and wants them to understand the importance of these visits.

**“WE WANT TO MAKE SURE THE PATIENTS UNDERSTAND THEY WILL NEED TO HAVE FOLLOW-UP LAB VALUES DRAWN, SO WHEN GIVING OUR PATIENT EDUCATION WE REITERATE THAT THEY WILL BE REQUIRED TO COME IN FOR LAB VALUES.”**

Wayne Woodbury, RPh

The PQI Process section follows labs with information on dosing and notes rasburicase dosing may vary per institution guidelines/policies. Patients with malignancies that are classified as having a high risk for TLS may require upfront dosing of rasburicase.<sup>4</sup> Nurse practitioner Stephanie Herro, APRN, AOCNP shares that at St. Elizabeth, the pharmacists are great at checking all of the TLS labs on any patient that is deemed high risk and “are quick to suggest rasburicase if appropriate.” The PQI informs the team that a 3 mg rasburicase dose may be considered for patients with a baseline uric acid < 12 mg/dL. In this case the PQI states that the use of allopurinol and aggressive hydration prior to initiation of rasburicase should be encouraged.<sup>4</sup> A 6 mg rasburicase dose may be considered for patients with baseline uric acid levels > 12 mg/dL or the team may consider an initial dose of 3 mg and monitor the patient’s uric acid levels closely to determine if a repeat dose of 3 mg is warranted. If the additional dose is warranted the repeat dosing can be considered 24 hours after the initial dose.<sup>4</sup>

St. Elizabeth has a TLS policy that is quite thorough according to Beck. As she explains, the policy contains information and guidance on “what tumor lysis is, laboratory TLS, clinical TLS and the labs you should be evaluating. The policy contains risk stratification based on disease tumor burden and patient specific factors like renal function, etc. It covers clinical manifestations, prevention and treatment. There is a section on hydration and then outlines using allopurinol and

rasburicase. It gives the mechanism of action for both drugs. On rasburicase specifically, we have a threshold, our policy says if a patient's uric acid level is between 8 and 12 mg/dL we give 3 mg of rasburicase and if it is greater than 12 mg/dL we give 6 mg of rasburicase." She continues, "the goal of the policy was to really provide a resource for all of pharmacy. Things like this inevitably come up on holidays, weekends and nights. The goal is really to provide a resource for the central pharmacy and other pharmacists, who may not specialize in oncology, to ensure we are using therapy appropriately." She also shares that she created a section for TLS monitoring in the note template her team uses when completing chemotherapy reviews in the patient's chart.

The last item in the PQI Process is to ensure uric acid levels obtained after rasburicase administration are immediately put on ice. If they are left at room temperature, the enzymatic activity of rasburicase will continue to break down uric acid and can result in a falsely low uric acid level.<sup>4</sup> Dr. Kotlove shares, "I will emphasize that the specimen has to be chilled in an ice water bath. The enzyme in rasburicase itself is a

recombinant enzyme. What I found fascinating is that actually many mammals have the enzyme but humans do not. It breaks down uric acid to a more water soluble compound that can then be extracted from the body, but that enzyme is still active when it is collected in the blood in the tube. It can still act to lower the uric acid and actually give you an artificially low uric acid value if it is not kept at that cold temperature." Beck created a smart phrase to put into the order instructions at St. Elizabeth to remind the nurses that the sample needs to be kept on ice until it is run for accurate uric acid levels.

**"I WILL EMPHASIZE THAT THE [URIC ACID] SPECIMEN HAS TO BE CHILLED IN AN ICE WATER BATH."**

Matthew Kotlove, MD

## PATIENT-CENTERED ACTIVITIES: KEEPING THE FOCUS ON PATIENTS

**T**he Patient-Centered Activities section follows the PQI Process and gives patient-centered guidance for the team. The **Use of Rasburicase (ELITEK®) for the Treatment of Tumor Lysis Syndrome**

PQI Patient Centered Activities includes a section of important patient education points. Both Southern Oncology Specialists and St. Elizabeth Healthcare place an emphasis on patient education and consider it extremely important. Southern Oncology Specialists pharmacy technician Deon Stafford, CPhT sees patient education as one of the biggest values of the team approach. He says having his pharmacist there on site is integral and Woodbury is "a wealth of knowledge. Having that knowledge at our disposal is always a benefit to patients." He adds that with the education aspect the patient has full access to everything they need.

The first educational point in this section is that although rare, hypersensitivity reactions have been reported with rasburicase. The next two points are that methemoglobinemia can occur as a result of rasburicase administration and hemolysis can occur after rasburicase administration in patients with G6PD deficiency.<sup>4</sup> Methemoglobinemia and hemolysis

can result with rasburicase administration due to oxidative stress caused by hydrogen peroxide, a byproduct generated during the breakdown of uric acid to allantoin.<sup>6</sup> Patients with G6PD deficiency are at a greater risk of these effects because they have a decreased tolerance to oxidative stress.<sup>6</sup> Gesenhues shares that St. Elizabeth does not test for G6PD but their protocol does incorporate things they can do to monitor for a patient that may be G6PD deficient in terms of monitoring hemoglobin, monitoring CBCs, bilirubin and looking for any adverse events that could be associated with the deficiency.

Finally, the PQI reminds the team to counsel patients to maintain increased oral hydration. Again, hydration and diuresis are critical to the prevention and management of TLS. The combination of hydration and enhanced urine flow promotes the excretion of uric acid and phosphate.<sup>5</sup> In addition to nursing, pharmacy and provider education, Dr. Kotlove shares that for issues like hydration often their practice involves nutritionists in the patients care both inside and outside the hospital. Herro shares the St. Elizabeth nursing team is also an asset in monitoring hydration status and she often has nurses



come to her to suggest additional fluids when warranted.

When educating patients, Beck explains her approach is “usually going in with the provider to talk to the patient, but then also after the provider leaves hanging back to have a more in depth conversation with the patient.” She likes to translate the physician’s plan “into more patient friendly language.” On educating patients about TLS she comments, “in addition to all the other scary things that they are hearing, ‘you have cancer and we are starting chemotherapy,’ I think the words tumor lysis syndrome sound scary so I like to talk the patient through what is happening. I talk a lot with my hands, I like to draw things for patients when I am talking to them, just to provide another means of education if they are a visual learner. I explain that TLS is essentially a good sign because that means we are killing their tumor cells.”

Woodbury describes the education process at Southern Oncology Specialists and shares their physician assistants support the oncologists in regards to education. He says, “think of a chemo teach that the PA owns. It is usually scheduled before a patient starts a regimen and it is an in depth review of the chemo regimen that is upcoming. It includes what the patient is to expect, side effects, contraindications, things they should be looking for. They lead with the chemo teach and I

support the chemo teach with traditional pharmacy education so patients get two rounds of education.” Heys performs the initial education sessions and says when educating patients she tries to keep things simple, “this is very new for a lot of people so I do not like to make it complicated.” She adds that she talks about TLS in simple terms and explains rasburicase will be administered to the patient to help prevent TLS from occurring.

**“IN ADDITION TO ALL THE OTHER SCARY THINGS THAT THEY ARE HEARING, ‘YOU HAVE CANCER AND WE ARE STARTING CHEMOTHERAPY,’ I THINK THE WORDS TUMOR LYSIS SYNDROME SOUND SCARY SO I LIKE TO TALK THE PATIENT THROUGH WHAT IS HAPPENING.”**

Mollie Beck, PharmD, BCOP

# SUPPLEMENTAL INFORMATION: TABLES FOR THE TEAM

**T**he Use of Rasburicase (ELITEK®) for the Treatment of Tumor Lysis Syndrome PQI ends with a Supplemental information section that contains two tables. The tables (shown on the right and page 9) provide information on diagnosis of tumor lysis based on the Cairo-Bishop Classification and on the risk and preventive treatment of TLS with ≤ 1 abnormal laboratory value. Dr. Kotlove explains that the patients at higher risk of TLS are typically identified by “a number of factors which include clinical—what type of cancer they have, for example an aggressive lymphoma or leukemia—and laboratory values at baseline which are indicative of potentially even spontaneous TLS. Those that are deemed high risk would be candidates for rasburicase at baseline. Alternatively if patients are deemed lower risk but then develop TLS despite prophylaxis those patients are typically also candidates for rasburicase.”

**PQI TABLE 1: DIAGNOSIS OF TUMOR LYSIS (CAIRO-BISHOP CLASSIFICATION)<sup>4,7</sup>**

Laboratory Tumor Lysis	Clinical TLS
Two or more of the following occurring in a patient with cancer within 3 days prior to or 7 days following initiation of cancer treatment:	Laboratory tumor lysis plus one of the following:
• Uric acid ≥ 8 mg/dL or 25% increase from baseline	• Serum creatinine ≥ 1.5 x ULN
• Potassium ≥ 6 mg/dL or 25% increase from baseline	• Cardiac arrhythmia/sudden death
• Phosphate ≥ 4.5 mg/dL or 25% increase from baseline	• Seizure
• Calcium ≤ 7 mg/dL or 25% decrease from baseline	



**PQI TABLE 2: RISK AND PREVENTIVE TREATMENT OF  
TLS WITH ≤ 1 ABNORMAL LABORATORY VALUE<sup>4,8</sup>**

Risk	Negligible Risk		Low Risk		Intermediate Risk		High Risk	
Cancer Mass	Small/resected localized tumor	Medium Mass	Medium Mass	Large Mass	Medium Mass	Large Mass	Me- dium Mass	Large Mass
Cell Lysis Potential	—	Low	Medium	Low	Medium/ Unknown	Medium/ Unknown	High	High
Preexisting nephropathy, dehydration, acidosis, hypotension, or nephrotoxin exposure	—	None	None	—	Yes	—	—	—
Treatment	No Prophylaxis		• Allopurinol • IV Fluids • Daily labs		• Allopurinol or Rasburicase • IV Fluids • Inpatient Monitoring • Labs every 8-12 hours		• Rasburicase • IV Fluids • Cardiac Moni- toring • Labs every 6-8 hours	

## THE MEDICALLY INTEGRATED TEAM: PROVIDING SAFE AND INNOVATIVE TREATMENT

**N**CODA member practices vary in size, type and geographical area. Something can be learned from each practice, and we find unique ways of providing top-notch patient-centered care across multiple practice settings. Pharmacy team members often take on tasks that directly impact the safety and quality of care. Stafford has ten years of IV chemotherapy compounding experience and now enjoys being part of the Southern Oncology Specialists team. Once he receives an order for a medication like rasburicase he verifies everything is correct and compounds the order using the correct strength and size vial as well as proper aseptic technique.

Stafford values the PQI because “from a technician standpoint it is always good to have literature on the drug you are interacting with- sometimes we come across things we may not mix with high frequency and it is a good point of reference.” Heys is newer to the

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Stephanie Herro, ARNP, AOCNP

oncology world and shares “I love being part of a community based practice, for multiple reasons, but one of them being the variety of cases that we see.” Since she is newer to oncology she shares she finds PQIs to be “an easy reference and reminder for myself.” She comments it is easy to get bogged down in information and the PQI is an easy read.

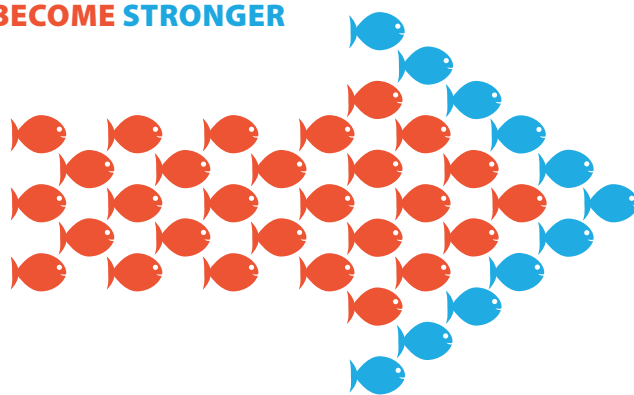
St. Elizabeth Healthcare uses the team approach and physicians, nurses, and pharmacists all work together on a daily basis. Rhodes comments on the integrated team and adding pharmacists to rounds from her nursing perspective. She shares, “it makes a huge difference, for us as nursing and for the patients as well. The pharmacist advocates for their patients and the nurses, as far as safety of staffing wise and how emergent it is for

patients to receive medicines versus how safe it is to give now.” She adds “they are also really helpful with providing education for us and the patients. We have a process that we go through from the nursing perspective, and the pharmacists have a lot of insight into drug specific things.” Pharmacy staff members along with their counterparts in nursing, social work, and financial counseling are making a difference for patients each day. Herro also appreciates being part of the St. Elizabeth team and comments, “I have worked in a lot of different institutions and I think our pharmacists here are excellent. I love that we are doing things to streamline processes for things that can be life threatening to our patients.”

## CONCLUSION : NCODA, THE MEDICALLY INTEGRATED TEAM AND THE RASBURICASE PQI: OPTIMIZING PATIENT OUTCOMES

**T**he Medically Integrated Team provides value to patients. Dr. Kotlove shares “part of the reason I joined our group is honestly the pharmacy support we have.” The **Use of Rasburicase (ELITEK®) for the Treatment of Tumor Lysis Syndrome** PQI provides the Medically Integrated Team with an easy to use, compact clinical resource guide when managing patients on rasburicase. Woodbury shares, “as an integrated pharmacy we are set up to work collaboratively and PQIs are our tools. The PQI fits into our model as a collaborative, integrated practice.” Pairing the Medically Integrated Team with the **Use of Rasburicase (ELITEK®) for the Treatment of Tumor Lysis Syndrome** PQI meets NCODA’s Guiding Values of being Patient-Centered and Always Collaborative.

**WORKING TOGETHER,  
WE BECOME STRONGER**



**“THE PQI FITS INTO OUR MODEL AS A  
COLLABORATIVE, INTEGRATED PRACTICE.”**

Wayne Woodbury, RPh

# REFERENCES

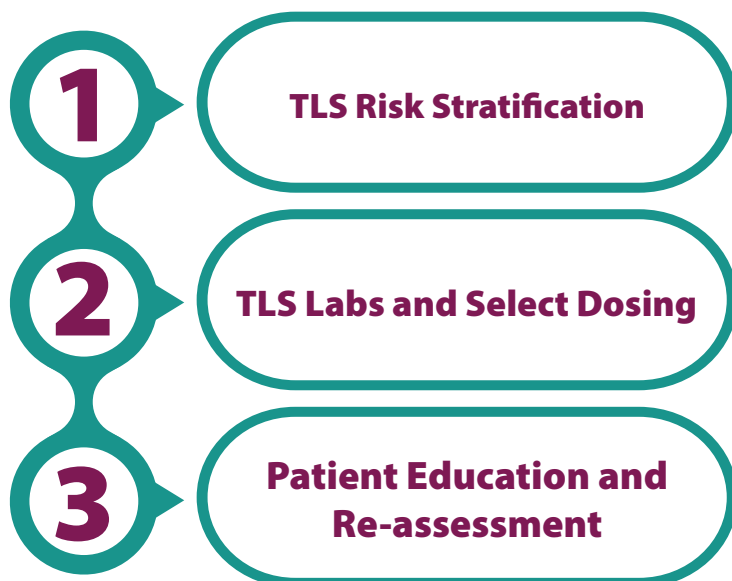
1. Elitek® (rasburicase) [prescribing information]. Bridgewater, NJ: Sanofi-Aventis; July 2019.
2. Mitchell PH, Wynia MK, Golden R, et al. Institute of Medicine of the National Academies. Core Principles and Values of Effective Team Based Healthcare. <https://nam.edu/wp-content/uploads/2015/06/VSRT-Team-Based-Care-Principles-Values.pdf>. Accessed March 2021.
3. <https://www.tandfonline.com/doi/full/10.1080/13561820.2019.1641476>.
4. Rush M. Positive Quality Intervention: Use of Rasburicase (ELITEK®) for Treatment of Tumor Lysis Syndrome. <https://www.ncoda.org/rasburicase-elitek-for-treatment-of-tumor-lysis-syndrome/>. Accessed November 2021.
5. Coiffier B, Altman A, Pui C et al. Guidelines for the management of pediatric and adult tumor lysis syndrome: an evidence-based review. *J Clin Oncol*. 2008;26:2767-78.
6. <https://onlinelibrary.wiley.com/doi/10.1002/ajh.23182>.
7. Cairo MS and Bishop M. Tumour lysis syndrome: new therapeutic strategies and classification. *Br J Haematol* 2004;127:3-11.
8. Howard C, Jones D, Pui C. The tumor lysis syndrome. *N Engl J Med*. 2011; 364(19); 1844-54.



## Helpful Online Resources

- [Elitek PQI](#)
- [NCODA Website](#)
- [Oral Chemotherapy Education Sheets](#)
- [Are you interested in authoring a PQI?](#)
- [Positive Quality Interventions](#)
- [Are you interested in taking part in a PQI In Action?](#)

## PQI Principles:



### ON THE COVER:

- The Medically Integrated team at St. Elizabeth Healthcare.

Practice panelist's comments reflect their experiences and opinions and should not be used as a substitute for medical judgement.

Important notice: NCODA has developed this Positive Quality Intervention in Action platform. This platform represents a brief summary of medication uses and therapy options derived from information provided by the drug manufacturer and other resources. This platform is intended as an educational aid and does not provide individual medical advice and does not substitute for the advice of a qualified healthcare professional. This platform does not cover all existing information related to the possible uses, directions, doses, precautions, warning, interactions, adverse effects, or risks associated with the medication discussed in the platform and is not intended as a substitute for the advice of a qualified healthcare professional. The materials contained in this platform are for informational purposes only and do not constitute or imply endorsement, recommendation, or favoring of this medication by NCODA, which assumes no liability for and does not ensure the accuracy of the information presented. NCODA does not make any representations with respect to the medications whatsoever, and any and all decisions, with respect to such medications, are at the sole risk of the individual consuming the medication. All decisions related to taking this medication should be made with the guidance and under the direction of a qualified healthcare professional.



## **NCODA'S POSITIVE QUALITY INTERVENTION IN ACTION**