

# A Physician Champion Takes a Practice-Based Immunotherapy Program to the Next Level





In late 2016, decreased reimbursement and the decision to participate in the Center for Medicare and Medicaid Innovation's Oncology Care Model (OCM) meant our Sidney Kimmel Cancer Center, Philadelphia, Pa., had to improve and streamline its triage processes. Patient safety had also become an issue. Incoming calls were recorded in an antiquated system, notes were often lost in the shuffle, or messages were not returned until late in the day.

Accordingly, our team (composed of Allison Zibelli, MD; myself; and several nurses and nurse practitioners) set out to create its first set of symptom algorithms to improve the overall symptom experience of its patients. The clinical algorithms were based on Oncology Nursing Society's *Putting Evidence into Practice* cards and National Comprehensive Cancer Network guidelines. To develop these algorithms and ensure that they reflected the holistic care provided, the Sidney Kimmel Cancer Center team solicited feedback from nurses, nurse providers, and physicians. At the same time, our team collaborated with John Sprandio, MD, to adopt algorithms based on daily symptom management protocols utilized at his Pennsylvania practice, Consultants in Medical Oncology and Hematology.

In June 2017, as Sidney Kimmel Cancer Center was on the verge of launching these clinical algorithms, our oncologists returned from the American Society of Clinical Oncology Annual Meeting, with data that demonstrated a survival advantage in all cancer types when patients received proactive symptom management between office visits.<sup>1</sup> This groundbreaking study on the use of technology for symptom management reported the following data:

**Bottom line: patients who were intensely monitored by nursing had a survival benefit that exceeded the survival advantage provided by five out of six medications approved by the U.S. Food and Drug Administration in 2016 to treat cancer.**

- 31 percent more patients in the self-reporting arm experienced quality of life benefits
- 7 percent fewer patients in the self-reporting arm visited the emergency department (ED)
- Median survival for patients in the self-reporting arm was five months longer.

This research reaffirmed what earlier studies have shown—that early symptom management is key in improving the quality of life for cancer patients. It enables patients to stay more functional, which is known to be associated with better survival. Symptom monitoring also improves control of chemotherapy side effects, allowing more intense and longer duration cancer treatments. Proactively monitoring patient symptoms prompts clinicians to





Standing, left to right: Jessica Thomas, RN, BSN; Samantha Asher, RN, BSN.  
Sitting, left to right: Tracy Virgilio, RN, MSN, OCN; Erin Sharpe-Mills, CRNP.

intervene earlier, before symptoms worsen and cause serious downstream complications. Symptom management also decreases ED visits and admissions. Bottom line: patients who were intensely monitored by nursing had a survival benefit that exceeded the survival advantage provided by five out of six medications approved by the U.S. Food and Drug Administration in 2016 to treat cancer. The American Society of Clinical Oncology 2017 data confirmed the need to implement algorithms at our institution to improve patient care.

## Implementation

In July 2017, our practice introduced step one of its high-touch process: chemotherapy algorithms, which are used by our triage nursing team (Figure 1, page 41). A triage nurse fields the calls from the patient and runs through the symptom map to manage the symptom. At the same time, the nurse will review the chart for current medication(s), the treatment plan, previous symptoms, and prior management. Once the appropriate symptom map is exhausted, the nurse re-educates the patient, closely monitors the patient, and/or consults with the physician or advanced care provider to determine the final intervention (i.e., prescription, same-day visit, or referral to the emergency department).

The next step in our process was the implementation of new technologies: the first was a symptom application (app) giving patients and their caregivers a phone-based platform at home to report symptoms electronically in real time. Should the symptoms trend too high, the patient or caregiver is prompted to call our triage line. The patient or caregiver will then discuss symptoms with the triage nurse and determine next steps based on the clinical pathway (see Figure 2, page 42).

The second technology implemented was the EPIC electronic health record (EHR) system hospital-wide, allowing medical oncology access to patient information from all over the hospital and from four additional practice sites. The EHR allowed our team to streamline processes even further—or so we thought—until we realized that triage messages were getting mixed together

with non-clinical messages, with no indication of which message was a priority. Patient safety again became an issue.

All calls for the department come into a central phone room. Post-EPIC implementation, our team developed a protocol for staff who answer calls. When the call is answered, it is identified as scheduling, non-clinical, or clinical. All symptom-related calls go to a triage nurse or covering nurse as soon as possible. This workflow allowed for an improvement of approximately 85 percent in routing messages to the appropriate team and overall improvement for answering symptoms calls within 30 minutes or less.

Our team also made the decision to build a triage note in the EHR that included the use of smart phrases to capture the following information in order to track these data:

- Type of symptom
- Start of symptom
- Severity of symptom
- Advice given to patient (i.e., monitoring, same-day visit, ED, or admission).

## Recognizing the Need for Immunotherapy-Specific Triage Pathways

At the same time our team was creating the new triage symptom note, the Sidney Kimmel Cancer Center was hosting an Association of Community Cancer Centers Immuno-Oncology Visiting Experts program. At this program, our team recognized the need to adopt immunotherapy-specific algorithms, introducing triage tracking and immunotherapy patient identifiers into our day-to-day operations. Our team understood the importance of identifying immunotherapy patients early in the triage process to allow for quick medical interventions to manage symptoms. For our team, immunotherapy-specific algorithms are a “24/7” process, not a “during normal clinic business hours” process.

Because the side effects for patients on immunotherapy present much differently than those patients on chemotherapy and pose very different challenges, our nurses and providers needed point-of-care, immediate access to resources that support early recognition and management of immune-related adverse events. Our first project leveraged the EHR so that all cancer patients receiving immunotherapy are identified immediately—24 hours a day—via bright yellow banners in the top right-hand side of the first page of their chart.

Next, physician champion Ryan Weight, DO, and our melanoma nursing team worked together to develop two sets of immunotherapy triage algorithms: one for on-call physicians and one for nurses. The on-call algorithms follow specific clinical guidelines, which provide non-oncology physicians the tools to properly identify and triage immunotherapy patients in a timely fashion to circumvent an ED visit. Upon completion, the nursing team created immunotherapy nursing triage algorithms based on the Sidney Kimmel Cancer Center physician guidelines and the melanoma management supplement published in the *Clinical Journal of Oncology Nursing*.<sup>2</sup> These algorithms guide nursing staff in assessing over the phone any patient on immunotherapy and empower nurses to recognize any potential life-threatening

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Figure 1. Chemotherapy Algorithm

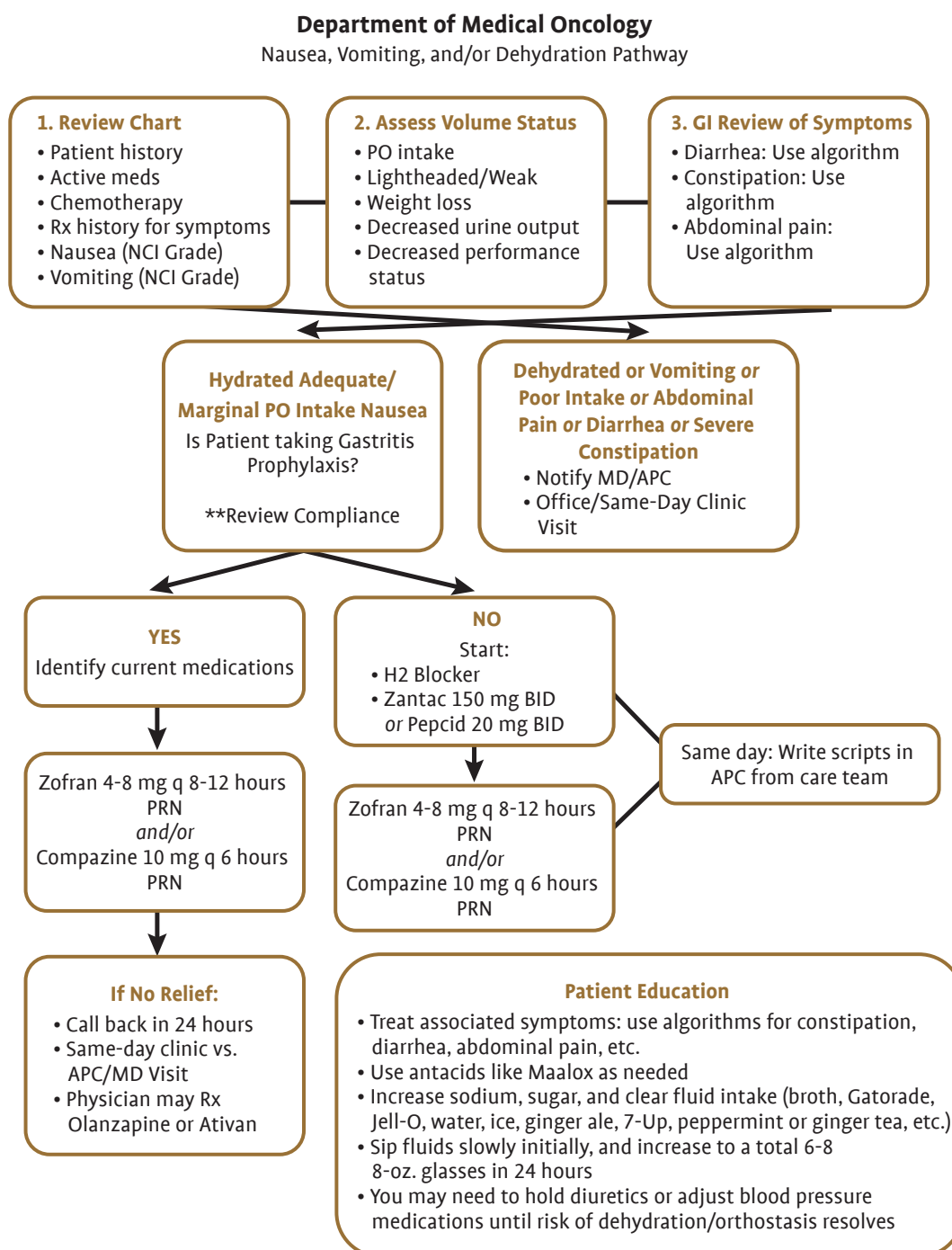
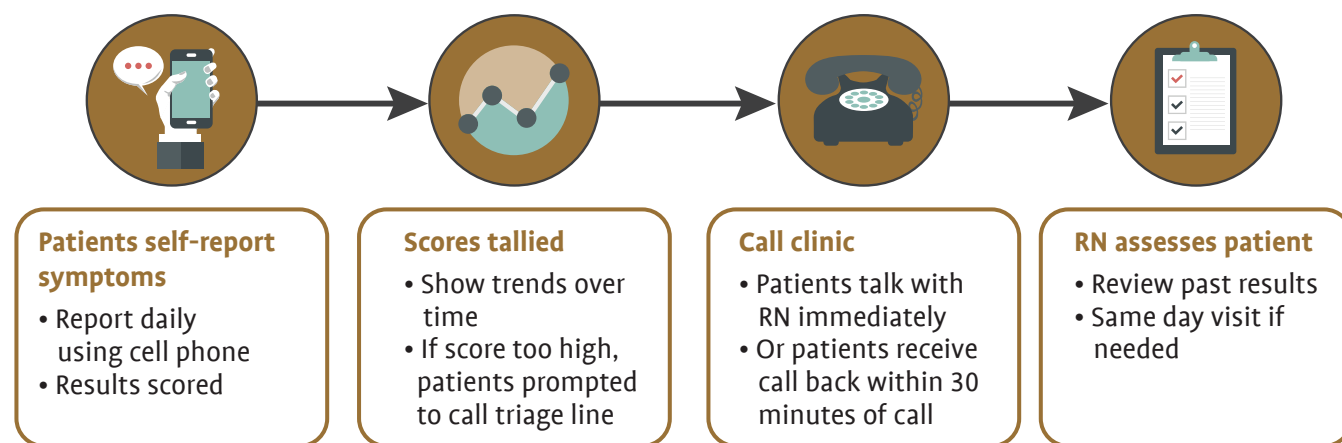


Figure 2. Implementation of the Symptom Management App



This project was not without its barriers. Two of the main challenges were low staffing resources and the lack of a dedicated triage nurse, thus leading to an influx of calls that could not be addressed until late in the day due to busy clinics.

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reactions and intervene appropriately. Our immunotherapy nursing triage algorithms include but are not limited to:

- Skin toxicity
- Gastrointestinal toxicity
- Hepatotoxicity
- Mucositis
- Type I diabetes
- Pneumonitis.

Our immunotherapy nursing triage algorithms include a nursing assessment encompassing chart review, patient feedback, patient education, and toxicity grading. Similar to our chemotherapy algorithms, patients may be managed at home, seen the same day, or admitted to the ED, depending on the severity of the

symptom(s) present. Our team modified the original “triage symptom note” to include immunotherapy symptoms for additional tracking purposes (Figure 3, right).

### Results

This project was not without its barriers. Two of the main challenges were low staffing resources and the lack of a dedicated triage nurse, thus leading to an influx of calls that could not be addressed until late in the day due to busy clinics. The EPIC dashboard showed an increase in turnaround time for managing symptoms, as well as an increase in severity of the symptom. Currently we are again reviewing the triage role and continue to enhance our processes and workflows. As part of our OCM practice transformation, the OCM project director runs a weekly triage symptom and outcome report that includes all elements of the triage note. The report is reviewed by nursing leadership to determine whether the management of the patient was appropriate and then escalates any concerns to our physician champions for further review. All triage notes are reviewed weekly for nurse compliance, modification of algorithms, and continuing education.

The above initiatives, developed by Dr. Weight and the Melanoma nursing team, have helped Sidney Kimmel Cancer Center transform our practice and improve outcomes and the overall quality of patient care. Some of the results we have noted include:

- Prompt response to symptom management
- Nursing empowerment
- Enabling nurses and nurse providers to work at the top of their license
- Greater patient satisfaction.


**Figure 3. Modification of Triage Symptom Note in EHR**

### Symptom Immunotherapy 29400

- IO arthralgias (joint pain)
- IO colitis (inflammation of colon)
- IO diabetes
- IO diarrhea
- IO endocrinopathy
- IO hepatitis
- IO mucositis
- IO myocarditis
- IO nephritis
- IO neurological
- IO pneumonitis
- IO rash
- IO thyroiditis
- IO xerostomia
- L-D chemo-embolization
- L-D immuno-embolization
- L-D radio-embolization

Note. IO = immunotherapy; L-D = liver-directed.

Our program is still in the infancy stage of reviewing ED and admission data to determine whether the triage process has decreased visits. However, we do know that this process was implemented on a much smaller scale at our sister site, with a 12 percent decrease in ED visits.

At Sidney Kimmel Cancer Center we will continue to review the processes. For example, as we integrate the navigation team into our workflow, we realize that our patients may reach out to navigators as an additional resource. We are currently discussing the triage process with the clinical navigation team. Afterwards, we will likely modify our education processes and workflows to ensure that patients are assessed and triaged and data is captured according to our protocols. 

Sidney Kimmel Cancer Center would like to thank Dr. Ryan Weight and the Melanoma team for all of their hard work on this important project. Without them, this project would not be possible.

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### References

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2. McGettigan S, Rubin KM. PD-1 inhibitor therapy: consensus statement from the faculty of the Melanoma Nursing Initiative on managing adverse events. *Clin J Oncol Nurs*. 2017;21(4 Suppl):42-51.

