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Addressing Issues in Patient Safety

Patient safety has long been recognized as an integral component of quality medical care. In the past decade, the spotlight on safety has only become brighter, with the publication of reports such as the Institute of Medicine's *To Err is Human* in 2000 and the growing attention to patient safety and medical error by the media. The stakes are especially high in oncology, and avoiding error is imperative in delivering chemotherapy. Because safety is central to the delivery of high-quality oncology care, representatives from the National Comprehensive Cancer Network (NCCN) member institutions convened in October of 2006 for the 2nd Annual NCCN Patient Safety Summit to share best practices and discuss ongoing challenges in the delivery of safe cancer care.

The Summit was hosted by NCCN member Memorial Sloan-Kettering Cancer Center in New York City. Physicians, nurses, pharmacists, cancer center directors, and quality and safety administrators participated in the Summit, which focused on safe chemotherapy delivery and how NCCN member institutions are tackling safety issues as they relate to new developments in cancer treatment. Discussions ranged from the implementation of computerized ordering systems to the growing availability and use of oral chemotherapeutic agents.

Several themes and lessons emerged from the wide-ranging discussions. First, safety is not the responsibility of one person or specialty but is a multidisciplinary concern. Programs that impact safety must be implemented with buy-in from individuals across the care spectrum. Second, communication is imperative to delivering safe care, whether the communication is between various electronic ordering and pharmacy systems for chemotherapeutics or between a physician and retail pharmacist treating a patient with an oral chemotherapeutic agent. Lastly, making a strong investment in safety can directly impact a cancer center's bottom line. Safety programs can be tied to quality indicators and payor incentives. An environment that focuses on patient safety can create a financial benefit by reducing a health system's direct liability and insurance premiums.

Nearly two thirds of NCCN member institutions are investing in safety by adopting electronic systems for order entry. Regardless of the vendor or system chosen for computerized physician order entry (CPOE), the cancer centers have faced similar triumphs and challenges. CPOE completely replaces handwritten orders, which present ample opportunities for error. These systems have with interfaces that, in some cases, display relevant laboratory values and interrupt with a "red flag" when an order is unexpected, illogical, or inappropriate.

Lawrence Shulman, MD, Chief Medical Officer and Senior Vice President for Medical Affairs at the Dana-Farber Cancer Institute, part of Dana-Farber/Brigham and Women's Cancer Center | Massachusetts General Hospital Cancer Center in Boston, Massachusetts, gave a keynote speech on oncology CPOE implementation. Dr. Shulman stressed the need for a multidisciplinary team and high-level support in bringing a CPOE system to life. CPOE among the Dana-Farber/Brigham and Women's Cancer Center | Massachusetts General Hospital Cancer Center community has evolved from a first-generation system, pioneered by the Brigham & Women's Hospital in 1994, to a second-generation system implemented not only at the central hospitals but also in a satellite affiliate practice. Dr. Shulman

asserted that the success in implementing this second-generation system came from two sources: the ability to give each person on the multidisciplinary team an equal voice in the development process and the team's emphasis on incremental improvement.

"We learned not to try to develop the ideal system," said Dr. Shulman. Instead, the team sought to implement a system that met their initial requirements and to "continue to build on, and build a better system with time."¹

Despite the promises of CPOE technology, challenges exist. Designing interfaces so that electronic systems within hospitals can communicate and share essential information such as vital signs and patient allergies is not always straightforward. For several NCCN member institutions, creating system interfaces has been challenging, especially in "matrix" systems where the cancer center is part of a larger hospital system. Implementing CPOE systems in the oncology setting—both inpatient and outpatient—is particularly complex, because the systems must allow combinations of drugs to be ordered, each one with different parameters. Additionally, bringing in new systems means changing practice habits. Physicians, mid-level providers, nurses, and pharmacists must learn how to use the system and accept the change, and clinical staff must cooperate with the information technology staff to make the system work.

New technologies do not only apply to electronic systems. The advent of numerous oral chemotherapy agents has provided new and effective therapy choices, but has also raised new safety issues. When a chemotherapy drug is self-administered, patients and their families assume greater responsibility in managing the care. Interactions with community pharmacists who may have varying degrees of experience in dispensing chemotherapeutics present more opportunities for error, but also provide opportunities for education.

As a member of the panel discussing oral chemotherapy safety, Dr. Saul Weingart, the director of the Center for Patient Safety at Dana-Farber Cancer Institute, shared his team's findings from a survey on oral chemotherapy safety practices in the United States. These results have been published in the *British Medical Journal*.² Of the 42 comprehensive cancer centers surveyed, clinicians at 29 centers used handwritten prescriptions to order oral chemotherapy. Clinicians at two centers used preprinted paper or-

ders, and another six centers used electronic ordering for oral chemotherapy agents. Additionally, elements such as diagnosis, protocol number, cycle number, and body surface area calculations were included in only a fraction of these oral chemotherapy orders.

A panel discussion on oral chemotherapy brought some interesting proposals from the audience: Should oncology be looking at adherence practices pioneered in the delivery of tuberculosis and HIV pharmaceuticals? What lessons could be learned from other specialties, such as solid organ transplant, where patients are subjected to similarly complicated dosage schedules of oral pharmaceuticals? Although many participants acknowledged that patient education and self-sufficiency are essential for patients to administer oral chemotherapy drugs effectively and safely, the oncology community is still developing solutions to the adherence challenge.

In a project that bridges some of the safety challenges presented in CPOE and oral chemotherapy delivery, NCCN plans to gather pharmacists from its member institutions to develop standard chemotherapy order templates. Pharmacists Amy Hatfield, PharmD, from the Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins, and Emily Stuntebeck, PharmD, from the University of Michigan Comprehensive Cancer Center, have taken the lead in this effort and presented the planned project to the Summit participants. Drs. Hatfield and Stuntebeck described the potential of standard orders for reducing errors in prescribing chemotherapy. Beyond the immediate capacity to prevent chemotherapy errors, standard order templates also can serve as a basis for the development of new quality measures, and pooling NCCN resources to create these templates is an efficient use of valuable oncology pharmacist time.

Participants were enthusiastic about the proposal to develop standardized NCCN chemotherapy templates, not only to facilitate the work of NCCN member institutions but also to make templates available to a wider audience of oncology providers who may not have the resources to create chemotherapy ordersets on their own. When a cancer center is planning to implement CPOE, the availability of templates could provide needed content for this electronic system. To address some of the many challenges surrounding oral chemotherapy delivery, oral prescription templates will be included in the standardized templates project.

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Rick Boothman, JD, Chief Risk Officer of the University of Michigan Health System (UMHS), concluded the Summit with the story of how UMHS successfully reduced insurance claims and created a culture of openness around patient safety. Mr. Boothman argued that the economic benefit of providing care safely and correctly, and therefore avoiding claims, outweighed the apparent cost of implementing safety programs. In 2006, despite increases in clinical activity, the number of claims at UMHS dropped below 100, from 193 claims in 2003 and 262 claims in 2001; transactional and legal expenses also fell. He also emphasized the need for a true commitment to patient safety beyond other factors that may make concentrating on safety less attractive, such as financial and time constraints of operating a hospital. A change in attitude is essential, and this was summarized in three principles: 1) compensating fairly and quickly when inappropriate medical care causes injury, 2) defending medically appropriate care vigorously because successful treatment can never be

guaranteed, and 3) reducing patient injuries (and therefore claims) by learning from mistakes.

Delivering safe cancer care is essential to delivering high-quality care, and key themes of patient safety emerged at the Safety Summit in not only the formal presentations but also the open forum and discussion. The meeting showed the participants' commitment to making continual investments in safety practices, their desire to communicate and share these practices with each other, and their willingness to work across disciplines to maximize safety for patients at each step along the continuum of cancer care.

References

1. Second Annual NCCN Patient Safety Summit, Transcript. Memorial Sloan-Kettering Cancer Center, October 12, 2006.
2. Weingart SN, Flug J, Brouillard D, et al. Oral chemotherapy safety practices at US cancer centers: questionnaire survey. *BMJ* 2007. Available at <http://www.bmj.com/cgi/content/short/bmj.39069.489757.55v>. Accessed March 13, 2007.