Counterpoint: Sowing the Seeds of Standardized Care to Reap Better Patient Outcomes

By Joseph O. Jacobson, MD

Medical oncology is at a critical crossroads. Our subspecialty emerged at a time when treatment of cancer was limited to surgical removal or radiation therapy for patients with localized malignancies. Patients were referred to medical oncologists with advanced-stage disease only, when other options had been exhausted. An empirical approach to care emerged. As new agents became available, they were tested across a broad range of cancers. In time, the benefits of combination chemotherapy were defined; chemotherapy became established as effective treatment of cancer in palliative, adjuvant and curative-intent settings. Again, largely through trial and error, and well-conducted clinical trials, effective therapeutic approaches emerged that successfully combined chemotherapy with radiation and/or surgery. Only in recent years has medical oncology begun to leave its early roots behind to enter the era of genomics and targeted therapies.¹

The empirical approach to medical oncology, and the relatively low penetration of clinical trials into practice enabled it to remain a craft or guild-based specialty.^{2,3} Individual patients expected to be offered uniquely designed solutions in which the medical oncologist forged a pact with the patient to identify the very best combination of agents for their condition. As relapses occurred, medical oncologists were ready with alternative solutions, combining different agents, or recycling previously effective ones, until the patient was either too infirm for further treatment or toxicities became intolerable. The results of this approach have best been summarized by Smith and Hillner in their article, "Bending the Cost Curve in Cancer Care."⁴ Cancer care costs have spiraled out of control, rising far more quickly than other health care expenses, greatly taxing insurers and employers, and frequently resulting in catastrophic financial consequences to patients, with little associated benefit.^{5,6}

Why Has Craft-Based Medical Oncology Practice Failed?

Lack of a Strong Evidence Base

Poonacha and Go⁷ recently published an exhaustive review of 1,023 clinical practice guideline (CPG) recommendations from the National Comprehensive Cancer Network for 10 common malignancies. Level 1 recommendations (high-level evidence with strong consensus) were found in only 6% of the CPGs, ranging from 1% for colorectal cancer to 20% for kidney cancer. Category 1 recommendations were available most often for therapeutic decision making and were largely absent for screening or surveillance. These findings are similar to those previously reported by Djulbegovic et al,^{8,9} who found that among 1,000 key decisions related to patients with cancer, only 24% could be supported by reliable

evidence; these decisions were based on only a tiny fraction of articles published in the oncology literature.

Limitations of Our Reasoning Ability

An array of reports from cognitive psychologists confirms that the human capacity for reasoned thinking is limited, that we frequently rely on risky heuristics (shortcuts we unconsciously use to simplify decision making), and that we are easily swayed by biases. Risks are greatest for decisions that rely on probabilistic thinking.¹⁰ Tversky and Kahneman recognized that even the mathematically savvy are not immune from heuristic errors, noting that "the tendency to predict the outcome that best represents the data, with insufficient regard for prior probability, has been observed in the intuitive judgments of individuals with extensive training in statistics."¹⁰ Dependence on heuristic shortcuts is common to the practice of medicine, frequently resulting in misdiagnosis or the selection of incorrect treatment.^{11,12} Physicians are particularly prone to errors predicting post-test probability, tending to underestimate the influence of prevalence.¹³ Failure to accurately estimate post-test probability has important implications, risking both under- and over-treatment. Decision support tools such as Adjuvant! Online have the potential to assist providers in assessing post-test probabilities but are available for only limited clinical scenarios.^{14,15}

Failure to Manage Use of High-Cost Diagnostic and Therapeutic Modalities

As in other areas of health care, cancer services have been influenced by factors that risk driving up rates of use. New imaging and treatment technologies and new drugs are rapidly implemented, often in the absence of evidence of superiority. The allure of the latest technology, coupled with effective marketing campaigns (including direct-to-consumer advertisements) and the desire to be at the cutting edge, partially explain the rapid adoption of new and expensive modalities.¹⁶ Other causes are more concerning. Financial incentives and pressures to maintain market control have contributed to rapid implementation of new technologies such as intensity-modulated radiation therapy and robotic surgery.¹⁷ Implicit coalitions between manufacturers and providers have been forged. Overt examples have resulted in criminal and civil settlements, as was the case for TAP Pharmaceutical Products in 2000.^{18,19} The controversial US Food and Drug Administration decision to create a Risk Evaluation and Mitigation Strategy for erythropoietis-stimulating agents was reached at least partly in response to perceived overuse as a result of strong financial incentives provided by at least one manufacturer.²⁰ The move by the Centers for Medicare & Medicaid Services to reimburse practices for chemother-

apy administration on the basis of average sales price rather than average wholesale price was instituted to reduce what was deemed to be excessive profits for medical oncologists.²¹

Lack of Effective Feedback Mechanisms

In general, practicing medical oncologists have little access to feedback about their patterns of care. The Quality Oncology Practice Initiative (QOPI), an ASCO-sponsored national measurement program, provides practices with benchmarked results of a series of performance indicators.^{22,23} QOPI participation is voluntary, and semiannual participation rates include only 250 to 350 practices, representing only a minority of US medical oncologists. Only a handful of QOPI performance indicators address overuse and otherwise do not address cost of care.²⁴

Moving Toward Profession-Based Care

What is the alternative to medicine practiced by autonomous physicians acting independently? Brent James describes the need to move to a completely new model of care, profession-based practice, which addresses the complexity of medicine and recognizes the need for a structural solution. As he notes, “rather than focusing on patients one at a time, as lone professional craftsmen, a group of clinical colleagues come together to identify high-priority care delivery processes that apply to large populations of patients with similar needs.”³ Profession-based medicine has as a core belief that care requires a multidisciplinary team working across conventional boundaries to agree to a standardized approach to specific conditions. The model, which has been successfully implemented at Intermountain Healthcare, has four key elements: (1) groups of peers treating similar patients in a shared setting; (2) coordinated care delivery processes (eg, standing order sets and CPGs); (3) standardized treatment approaches in which individual clinicians are expected to adapt to specific patient needs; (4) regular assessment of key processes and outcomes of care not as “measurement for comparison,” but as “measurement for improvement.”²⁵ In this model, CPGs are not static tools, but rather are dynamic instruments intended to be regularly updated and bypassed when clinically indicated.^{3,26} Working from a shared baseline, this approach encourages variation due to differences in patient characteristics, but discourages unwarranted variation due to unjustified differences in practice. This is the antithesis of “cookbook” medicine. CPGs become dynamic documents, regularly updated by studying and learning from patterns of variation and by incorporation of new information.

There are two potential actions to take when an industry is forced to make a paradigm shift. The first is to hunker down and try to wait it out, hoping that the shift will fail. The other approach is to become a stakeholder, to lead rather than be led. Rogers described the rate of acceptance of new technology as following a bell-shaped curve ranging from “innovators” to

“laggards.”²⁷ Medical oncologists should seize the opportunity to be at the vanguard of health care reform, not at the trailing end. Some first steps are outlined below:

- Leave the craft of medicine behind. The complexity of medicine is now too great to rely on a flawed human mind. Use tools (CPGs, standard order sets, care pathways) to provide high-reliability cancer care. Actively engage in their design, implementation, and continuous improvement.
- Identify unwarranted variation and system waste present in the routine care of our patients. Train staff and physicians in the tools of quality measurement and improvement and in effective team management.
- Require our institutions and electronic health record vendors to provide access to key process, outcome, and cost measures that are timely, detailed, and accurate enough to refine our delivery of care.
- Participate in QOPI. (www.asco.org/qopi).
- Engage ASCO and state-level affiliates to address egregious practices by some health insurers. These well-intentioned but poorly designed or executed efforts to manage patient care must be eliminated.

What does the medical oncology community risk by failing to be preemptive? We risk being viewed as part of the problem rather than part of the solution. In Massachusetts, where health care reform is well underway, oncologists have begun working with health insurers to focus on unwarranted variation in care. In 2011, a task force representing radiation oncologists from across the state, working in collaboration with Blue Cross Blue Shield of Massachusetts (BCBSMA), created a standardized set of indications for the use of intensity-modulated radiation therapy. Uniquely, the task force members and BCBSMA leadership have agreed that coverage decisions will be based on these codeveloped indications. A group of medical oncologists is poised to do similar work. These alliances, and those that we must forge with accountable care organizations, provide opportunities for our specialty to be responsible participants in health care reform.⁴

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