The Value of Actionable Content in a Clinical Setting: Access to Better Information Facilitates Enhanced Cancer Care

A. Jacqueline Mitus, MD, and Laura Coughlin, RN

All available patient and medical information drives clinical decisions. However, the inability to provide evidence-based medical information when and where it is most useful can compromise efforts to deliver the best care. Payers and providers alike understand the importance of actionable content—namely, information designed to prompt or to suggest an action—but they struggle with how to deploy such information directly into the context of day-to-day patient care.

In the world of oncology specifically, we have more information today than ever before. We have information about various types of cancer at the molecular level, the evolution of many tumors at several stages in different people, diagnostic tests, chemotherapy regimens, and more. In fact, the volume of cancer-related information available today makes it a challenge for anyone to keep up with it. The number of randomized clinical trials (RCTs), for example, is expanding exponentially. “You would have to read 500 RCTs per week in 2008 to cover the published RCTs in PubMed,” noted cancer expert Carl Heneghan in 2010.¹ And, according to his research, this problem is only going to grow more acute. “At current rates we can expect to see 50,000 RCTs per year published by 2018-9.”¹ In oncology, the American Association for Cancer Research publishes more than 26,000 pages of original research annually in only 6 journals.²

The sheer volume of external information is not the only barrier that providers face in determining a patient’s needs at a given moment in the course of care. The growing sophistication of diagnostic tools and chemotherapy regimens requires that providers take into account increasingly more patient-specific information when making clinical decisions.

To provide the best care, health professionals need “actionable content,” namely, information that can automatically prompt the best decisions about care at the point in time when clinical decisions need to be made. Implicit in this definition is integration of the information into a comprehensive workflow, as well as the ability to utilize information from many different sources by various stakeholders.

Actionable Content in Practice

What might actionable content look like in practice, and what benefits does it yield in terms of clinical decision-making and administrative efficiency? For example, an oncologist is meeting a 44-year-old premenopausal woman who has been diagnosed in the early stage of triple-negative breast cancer. She has a family history of breast cancer, but she has not undergone genetic testing for a BRCA1 or BRCA2 mutation that would confirm (or reject) a familial predisposition to breast or to ovarian cancer.

A solution-based electronic system that includes clinical and payer guidelines is designed to provide actionable content in this particular set of circumstances would offer clinical guidance regarding the appropriateness of molecular diagnostic testing, as well as a recommendation about which commercially available test is indicated and covered by payers. In addition, the treating physician may be presented with options for chemotherapy regimens that take these factors into account, while considering the latest outcome studies and research available. This solution also could inform the oncologist which treatments the patient’s health insurance plan will cover, and at which facility. It could even alert the oncologist to specific clinical trials from which this patient may benefit.

All of this information would be made available while the oncologist is sitting in the examination room with the patient. This system could also queue up relevant

Dr Mitus is Senior Vice President, Clinical Content Development and Strategy, and Ms Coughlin is Vice President, InterQual Development and Clinical Strategy at McKesson Health Solutions, Newton, MA.
information for the treatment facility, register the patient in the oncology care center, schedule visits, and send referrals to the patient’s insurance provider (complete with the appropriate diagnostic and clinical codes), all of which are performed transparently in the background. As soon as the oncologist and the patient discuss the treatment options and agree on the course of action, the oncologist would click “okay” in the electronic system and the workflow system that is supporting the actionable content system would automatically set those procedural wheels in motion.

A Framework for Linking Clinical Concepts to Business Processes

Healthcare stakeholders must be able to ingest, synthesize, and use information that is fact-based, comprehensive, and current to make the best decisions and to enact them in a timely manner. This content comes from a variety of sources, including:

- Current evidence-based guidelines, published outcome studies, emerging data about new diagnostic and therapeutic interventions (eg, molecular tests and drugs), clinical code sets, and more
- Patient-specific data, such as laboratory and other test results that are available in electronic medical records (EMRs) and insurance information
- Practice- and facility-specific data, including information about hospitals and research facilities in the area and reimbursement contracts with insurers.

Once the relevant and validated content is identified, the next step is to ensure its availability at the right points in the care continuum, as well as to seamlessly deliver this information into workflows in a way that does not require users to access other systems. These points of care include:

- The practitioner at the various points where well-informed decisions must be made
- The patient when appropriate
- Additional care providers as needed
- The facilities where procedures will be performed, prescriptions will be filled, and more
- The insurance companies that will be covering the cost of procedures and treatments
- The internal departments that handle billing and scheduling.

Rules must be applied to information for it to become actionable in medicine. These can be quite simple, such as an automated reminder to the patient and the physician about the need to schedule an annual mammogram, or very complex, such as when clinical specificity is combined with artificial intelligence, or a computational system that can learn and improve on its decision-making over time, to identify oncologic risk factors and recommend proactive preventive treatments.

As structured or codified data gradually replace text within EMRs and other healthcare information systems, the power of this information to positively influence decision-making becomes more readily apparent. This advancement makes it possible to efficiently feed multiple, complex data streams from multiple systems to automatically initiate a rule that can then serve up a recommended course of action. Even when structured data are not available, technologies, such as natural language processing, can apply structure to narrative text, thereby minimizing human intervention through the use of rules.

As payer and provider organizations alike experiment with new care delivery and payment models, the ability to tie clinical concepts to business processes (eg, to use quality metrics as a basis for reimbursement) has become essential.

As payer and provider organizations alike experiment with new care delivery and payment models, the ability to tie clinical concepts to business processes (eg, to use quality metrics as a basis for reimbursement) has become essential. For example, concepts such as “worsening,” “severe,” and “over time” are common parameters that need a specific definition to become actionable, measurable, and to be used as part of a reimbursement model. Information must appear directly in workflows at various points of care or in “transactions” (eg, authorization, benefit design, and network selection) on demand, with an understanding of the context into which it is being delivered, to become truly actionable.

“Content as a service” is a term we use to refer to the delivery method for providing actionable, rules-based information at any point of care. A centralized repository electronic system houses the rules, which are then deployed seamlessly into diverse healthcare workflows via web service calls. This provides multistakeholder alignment around a common set of information, which can result in better decisions, increased efficiency, and shared accountability between payers, providers, and patients, ultimately leading to better patient care.

One such example is the patient care plan. At its most basic, a care plan is a living document designed to guide and to focus the patient and his or her care providers on the ongoing assessment and management of clinical issues. The plan is typically generated using evidence-based assessments to identify a list of problems, goals, and interventions. The consistent delivery of the assessment at the point of care, and the sharing of the results of that
assessment across multiple settings of care using content as a service, can help to ensure the consistent delivery of high-quality care.

**Benefits Across the Healthcare Continuum**

In terms of its ability to support optimal decision-making among all stakeholders in an oncology setting—from the provider to the patient to the insurer—the value of actionable content cannot be underestimated.

*For healthcare providers*, high-value, actionable content advances the art and science of care delivery by ensuring that they have access to the best, most current, and most relevant clinical knowledge at the point of patient interaction. Where possible, offloading operational tasks can free clinicians to focus on the delivery of care rather than on the administrative processes that support it.

*For insurers (or payers)*, actionable content can connect all the stakeholders in a way that would be nearly impossible without a significant investment in other resources. Playing a central role in supplying the content, rules, and increasingly automated and intelligent solutions, payers can continue to transform their role from processors of claims to enablers of high-quality, clear, consistent, and transparent care, all while removing the administrative inefficiencies that exist in delivering and in paying for appropriate care.

*For patients*, actionable content can transform a complicated, disjointed and impersonal healthcare system into one that “knows” their individual clinical needs in context and provides a personalized “healthcare global positioning system” to help patients manage their own care.

When stakeholders are aligned around the same actionable content, healthcare has a powerful tool for optimizing quality, efficiency, and care coordination. The end result is better clinical and financial outcomes.

Actionable content offers healthcare a powerful tool for driving quality, efficiency, and care coordination.

**Author disclosure statement**

Dr Mitus and Ms Coughlin are employees of McKesson Corporation.

**References**