What’s Cost-Effective in Cancer Care?

Lancet Oncology Commission seeks more-tailored ways to gather data for tough decisions

Advances in cancer treatments often “are overwhelmed by the trivial focus on small benefit and total ignorance of potential costs,” declares a report published last month by the Lancet Oncology Commission, which calls for a “radical shift in cancer policy” to deliver care affordably.

The 48-page report, “Delivering affordable cancer care in high-income countries,” aims to address what drives and what might overcome “the so-called cancer-cost curve.” The commission, chaired by Richard Sullivan, MD, PhD, of King’s College in London, included 37 experts from many institutions.

One strong theme throughout the document is the frequent lack of suitable data for cost-effectiveness analyses. Among the issues related to cost studies:

- **Defining clinical success consistently**: “Is an intervention that is proven to shrink a tumour or slow progression in the metastatic setting without improvement in overall survival viewed as ineffective, marginally effective, or clinically beneficial?” the commission asks.

- **Standardizing analyses**: “Cost-effectiveness analysis can produce markedly different results depending on the source of data used in the modeling,” the report points out. “These analyses are highly sensitive to the health system context, because diagnosis and patient management vary considerably across countries and even within countries.”

- **Correctly interpreting clinical trials**: Although randomized clinical trials (RCT) are the gold standard for improving medical practice, “these trials might not predict benefits and costs when a new treatment is used more widely,” the commission says. “Patients enrolled in RCTs are usually highly selected and might not be representative of patients treated in general oncological practice.” Additionally, analyses may emphasize statistical results too heavily rather than paying sufficient attention to clinical effects.

- **Gathering cost data in trials**: “The collection of economic data should be fully integrated into RCTs, and analyses should be guided by hypotheses and a pre-established statistical plan,” the document says.

- **Gathering cost data in the clinic**: “Incredibly, most physicians and surgeons in major institutions are unaware of the cost of their own services or the technology and investigations that they order,” the commission comments. “The simple approach of educating physicians, by making it mandatory that charges for every test, and procedure, are cited, would help educate us all.”

- **Gathering cost data more widely**: Very few high-quality databases “include relevant data from diagnosis to long-term outcomes, including patient characteristics, medical history, and concomitant illnesses,” according to the report. “Public authorities request
more and more evidence of the effectiveness of medical technologies, but gathering of useful data is increasingly limited . . . Ideally, a small proportion of public spending on drugs should be devoted to evaluation of their effectiveness at a population level, and to pharmacoepidemiology.”

- **Overcoming limits on assessing surgical outcomes:** Examinations of benefits from cancer surgery are constrained by “the paucity of data from high-quality trials that assessed surgical and related imaging technology and the associated costs, geographical variation in utilisation of surgery, and surgical effectiveness in relation to overall clinical outcomes and quality of life,” the report declares. As the number of robot-assisted procedures soars, it adds, “the robotic surgical community has a responsibility to design large-scale, multicentre RCTs to identify which patients will benefit from open surgery versus robotic-assisted procedures.”

- **Rethinking cost-effectiveness in radiation oncology:** “In this era of personalized medicine and rapid technological advancement, an infinite number of RCTs could be conceived to answer evidentiary questions in radiation oncology,” the authors remark. Instead, they call for value-based assessment of radiation oncology treatments with “the ability to gather evidence in an ongoing manner throughout the relatively short life cycle of radiation oncology technology and to adapt to inevitable incremental changes in the technology.”

- **Building evidence for pharmacogenomics:** “Clinicians should temper enthusiasm for the spectacular science in this area while research continues to understand its role in clinical practice,” the commission suggests. “Understanding the economics of pharmacogenomics is challenging because the available evidence is inadequate to truly inform discussions . . . It is not adequate for a test to predict the presence or absence of a genetic sequence or disease; it must improve a patient’s clinical outcome.”

- **Leveraging “coverage with evidence development” (CED):** Since 2006 the Centers for Medicare and Medicaid Services (CMMS) has offered the CED framework, in which developers of a promising technology, in order to be reimbursed, agree to require patients to participate in a clinical trial or registry. “CED could address many complexities by generating adequate evidence, improving access for patients, addressing regulatory concerns, simplifying reimbursement decisions, and improving the likelihood and timing of financial gains,” the commission says. “The largest stumbling block is that the NIH, CMMS, and private payers have not developed mechanisms to cover the additional costs.”

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