

# The Cost Impact of New Cancer Medications



**Nabil Kronfol MD, DrPH<sup>1</sup>**  
Professor of health policy  
and management  
President of the Lebanese  
HealthCare Management  
Association, Lebanon

expenditure. The global economic impact of premature death and disability from cancer is around USD 900 billion.

Two facts appear indisputable for the future. First, more can be done by countries to diagnose and manage most types of cancer, including prevention<sup>4</sup>. Second, the cost of cancer care has risen appreciably in recent years, and is projected to increase at an unsustainable rate, with the prices of new cancer medicines increasing up to 10-fold during the past 10 years and likely to continue<sup>5,6</sup>. As a result, continued access to cancer care is under threat unless addressed<sup>7</sup>.

The worldwide cost associated with new cancer cases was estimated at US\$ 286 billion in 2009, with medical costs making up more than half of the economic burden<sup>8</sup>. It has been suggested that pharmaceuticals currently account for approximately 30-40% although this varies considerably across countries. It is estimated that the number of newly diagnosed cancer patients will grow from 12 million each year worldwide to 20-27 million by 2030<sup>9</sup>. Treatment protocols are likely to become more complex and so is the appreciable cost of new cancer drugs, often with only

Cancer is one of the most important and expensive NCDs facing health care systems<sup>2,3</sup>. It is a leading cause of death globally. Cancer remains a major health care challenge. In OECD countries, the incidence of newly diagnosed cases of cancer averages 261 cases per 100 000 people. Cancer is responsible for more than one-quarter of all deaths and, in terms of potential life years lost.

Cancer currently consumes around 5% of all health care costs. Increasing incidence, prolonged survival and high costs of novel drugs and technologies mean that growth in spending on cancer is outstripping growth in total health

<sup>1</sup> Dr Nabil Kronfol is a professor of health policy and management – and the founder and president of the Lebanese HealthCare Management Association, Lebanon.

<sup>2</sup> Chalkidou K, Marquez P, Dhillon P, Teerawattananon Y, Anothaisintawee T, Gadelha C et al. Evidence-informed frameworks for cost-effective cancer care and prevention in low, middle, and high-income countries. *Lancet Oncol.* 2014;15(3):e119-e131.

<sup>3</sup> Sullivan R, Peppercorn J, Sikora K, Zalberg J, Meropol N, Amir E et al. Delivering affordable cancer care in high-income countries. *Lancet Oncol.* 2011;12(10):933-980.

<sup>4</sup> Peppercorn J, Zafar S, Houck K, Ubel P, Meropol N. Does comparative effectiveness research promote rationing of cancer care? *Lancet Oncol.* 2014;15(3):e132-e138.

<sup>5</sup> Kelly R, Smith T. Delivering maximum clinical benefit at an affordable price: engaging stakeholders in cancer care. *Lancet Oncol.* 2014;15(3):e112-e118.

<sup>6</sup> Godman B, Malmstrom R, Diogene E, Gray A, Jayathissa S, Timoney A et al. Are new models needed to optimize the utilization of new medicines to sustain healthcare systems? *Expert Rev Clin Pharmacol.* 2015;8(1):77-94.

<sup>7</sup> Aggarwal A, Ginsburg O, Fojo T. Cancer economics, policy and politics: what informs the debate? *Perspectives from the EU, Canada and US.* *J Cancer Policy.* 2014;2:1-11.

<sup>8</sup> Sullivan R, Peppercorn J, Sikora K, Zalberg J, Meropol N, Amir E et al. Delivering affordable cancer care in high-income countries. *Lancet Oncol.* 2011;12(10):933-980.

<sup>9</sup> Aggarwal A, Ginsburg O, Fojo T. Cancer economics, policy and politics: what informs the debate? *Perspectives from the EU, Canada and US.* *J Cancer Policy.* 2014;2:1-11.

minor clinical benefits (see Table 1)<sup>10</sup>. Cancer medicines will also represent a rising proportion of the cancer care budget. The cost of cancer care in the United States alone is projected to increase to US\$ 173 billion by 2020<sup>11</sup>.

**Table 1 Examples of high prices for cancer drugs (acquisition costs) with often limited health gain**

Drug	Total drug acquisition costs per patient and estimated increase in survival
Cetuximab	US\$ 80,352; 1.2 months (non-small cell lung carcinoma)
Bevacizumab	US\$ 90,816; 1.5 months (metastatic breast cancer-not statistically significant)
Erlotinib	US\$ 15,752; 10 days (pancreatic cancer)
Sorafenib	US\$ 34,373; 2.7 months (renal cell carcinoma)

**Source: Fojo & Grady (9).**

Recent assessments show that new medicines to treat patients with cancer cost between US\$ 6,000 and US\$ 10,000 per month, and the relationship between their reimbursed costs and associated health benefit is often limited<sup>12</sup>.

Of the 12 drugs approved by FDA for various cancer indications in 2012, nine were priced at more than US\$ 10 000 per month and only three prolonged survival — two by less than two months. This was associated, however, with minimal or no impact on overall survival, at a cost of US\$ 70,000-140,000 annually<sup>13</sup>.

These high costs are already causing concern among physicians and payers regarding the consequences of limiting access to new cancer medicines, especially given limited rationale for requested prices and often limited health gain. Despite this, requested prices are likely to continue to rise among most new cancer drugs launched for targeted indications, as manufacturers typically seek orphan status and associated high prices<sup>14, 15</sup>.

Consequently, the ability for countries — including

developed countries — to deliver affordable cancer care appears to be at a crossroads and the following questions need to be addressed:

- How does it affect patient outcomes?
- What is the possible rationale for reimbursement, as one begins to question cost-per-QALY thresholds, mindful of the need to sustain health care systems in the future?
- What are the implications for the future, including means to reduce total cancer care costs?

Factors implicated in differences in outcomes from different cancers between countries include issues such as the lateness of diagnosis — incorporating access to screening and diagnostic services — as well as differences in management approaches, particularly for older patients. Overall, improved survival appears to be more closely related to issues such as accessibility to services and affordability, as well as factors such as lifestyle, than it is to late diagnosis. Consequently, introducing well-coordinated national and regional policies, including prevention, appears to be a beneficial strategy for the future.

Several studies have shown appreciable differences in the

<sup>10</sup> Fojo T, Grady C. How much is life worth: cetuximab, non-small cell lung cancer, and the \$440 billion question. *J Natl Cancer Inst.* 2009;101(15):1044-1048.

<sup>11</sup> Ibid

<sup>12</sup> Abboud C, Berman E, Cohen A, Cortes J, De Angelo D, Deininger M et al. The price of drugs for chronic myeloid leukemia (CML) is a reflection of the unsustainable prices of cancer drugs: from the perspective of a large group of CML experts. *Blood.* 2013;121(22):4439-4442.

<sup>13</sup> Kantarjian H, Fojo T, Mathisen M, Zwelling L. Cancer drugs in the United States: justum pretium - the just price. *J Clin Oncol.* 2013;31(28):3600-3604.

<sup>14</sup> Mullard A. 2011 FDA drug approvals. *Nat Rev Drug Discov.* 2012;11(2):91-94

<sup>15</sup> Kmietowicz Z. NICE says drug for metastatic breast cancer is unaffordable for NHS. *BMJ.* 2014;348:g2888.

uptake of new cancer drugs across the OECD countries. Potential reasons for the differences seen include:

- Access to specialist services;
- Differences in reimbursement and funding

One suggested way to help curb the unsustainable increase in the costs of cancer care including new medicines is greater use of comparative effectiveness research that should include greater scrutiny regarding the clinical value of new cancer medicines and their cost—effectiveness versus current standards as well as greater questioning over the pricing model for new cancer therapies.

Greater use of patient registries after launch should also enhance the appropriate use of new cancer medicines. Also, greater collaboration between technology assessment agencies is needed to improve the relevance of data from clinical trials. It should be recognized, however, that the prolonged course of cancer disease may slow down clinical research

Ferguson and colleagues in the United Kingdom suggested that no premium should be paid for a new cancer medicine unless it prolonged survival by at least three months compared with existing standards. The American Society of Clinical Oncology Cancer Research Committee recently identified an improvement in median overall survival in a range of 2.5-6 months across a range of tumors as the minimum incremental improvement that would define a clinically meaningful outcome for a new cancer medicine (extent would depend on the tumor type).

These challenges have resulted in Kantarjian and colleagues, as well as others in the United States, suggesting the following when authorities across countries including the United States review the potential prices of new cancer drugs:

- US\$ 50 000-60 000 per year — more than six months or a third of the usual life expectancy, or improvements in long-term survival of 10% or more;
- less than US\$ 30 000 per year — minimally effective drugs that have an overall survival benefit of less than two months or less than 15% of the envisaged patient lifespan;
- US\$ 30 000-50 000- new drugs that have an intermediate benefit between these two bands.



Comparing survival estimates across countries suggest that international differences in cancer survival do not arise randomly, but are likely to be the result of systematic differences in the way that cancer care programs are organized and funded.

Countries are not doing as well as they could in the fight against cancer. It is reckoned that one-third of cancers could be cured if detected on time and properly treated (and another third prevented if more far-reaching public health measures were in place).

Policy approaches associated with better survival after a diagnosis of cancer ought to include<sup>19</sup>:

1. An adequate level of resourcing is vital: Availability of chemotherapy, diagnostic and therapeutic equipment and cancer specialists
2. Starting treatment quickly is critical when dealing with cancer.
3. Nationwide screening programs (particularly for breast cancer), shorter waiting times and the reported provision of evidence-based best practice are associated with improved cancer survival.
4. Invest in prevention programs (Smoking cessation programs, healthy life styles)
5. Measuring and improving the quality of cancer care services through quality assurance programs.
6. Clinical guidelines to support clinicians to choose the best course of treatment
7. Robust monitoring arrangements for targets and minimum thresholds
8. Setting out the priorities for national cancer control including a national cancer control plan (NCCP). The bedrock of success in the fight against cancer is a national cancer control plan
9. Improving the quality of life of people with cancer and their families
10. Improve Monitoring and evaluation

<sup>19</sup> Cancer Care: Assuring quality to improve survival. OECD/European Commission., November 2013



## A NEW GE MRI

**1.5 T OPTIMA 360 ADVANCED (16 Channels)**  
IS INSTALLED IN ZALKA  
ST. MARC MEDICAL AND RADIODIAGNOSTIC CENTER



ZALKA ST. MARC RADIODIAGNOSTIC CENTER

TEL.: 01/885222-01/885829

03/422112-03/668664-FAX : 01/891464

Web Site : [www.stmarclab.com](http://www.stmarclab.com) . e-mail : [stmarco@cyberia.net.lb](mailto:stmarco@cyberia.net.lb)