

When is the Cost of Care Worth it?:

Examining Treatment Costs Through A Quality-Adjusted Framework

New medical technologies to treat chronic disease are typically accompanied by increases in both health care costs and health outcomes: while treatment costs have continuously increased over the years, the value of those treatments have not always shown the same growth in measured benefits. **Darius Lakdawalla**, Quintiles Chair in Pharmaceutical Development Regulatory Innovation at the Schaeffer Center and the USC School of Pharmacy, and his team of researchers, have established a quality-adjusted cost-of-care framework, which measures increases in health care costs, offset by the value of improved health outcomes. **The research was published in the April 2015 issue of Health Affairs.**

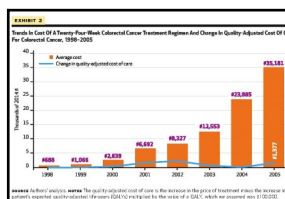
As a proof of concept, Lakdawalla and co-authors apply the quality-adjusted cost of care framework to case studies of colorectal cancer and multiple myeloma. This metric provides policy makers with important added considerations beyond increases in financial costs and also identifies treatments in which costs rise without sufficient increases in value.

Calculating Costs in a Quality-Adjusted Framework:

1. Construct the conventional change in health care costs.
2. Measure the growth in value to patients.
3. Solve for the net change in quality adjusted cost of care through the difference between the change in costs and the change in benefits.

CASE STUDIES: MULTIPLE MYELOMA AND COLORECTAL CANCER

Multiple Myeloma



Multiple Myeloma is a condition that arises from abnormal proliferation of plasma cells in the bone marrow that affects thousands of new patients every year.

From the early 2000s to the mid-2000s, treatment for multiple myeloma considerably improved from the use of first-line, or initial, therapy treatments, to the development of second-line therapy drugs, which are given after the first line therapy fails, or after the disease relapses.

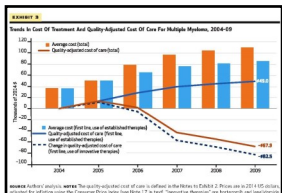
[Link to Health Affairs](#)

The researchers analyzed the quality-adjusted cost of care after the introduction of second-line therapies.

First Line Therapy Patients receiving only the already established first-line therapies did not receive any of the benefits of second-line treatment innovations. Their quality-adjusted cost of care during this timeframe increased by \$49,000 per patient. This was due to increases in the cost for traditional medication without increased health benefits from the second-line treatment innovation.

Second-Line Therapy The development of second-line therapies increased the average annual cost per patient from 2004 to 2009 by \$72,937 to \$109,544. But, when the framework was applied, the quality-adjusted cost of care fell by \$67,863 throughout that period due to increased health benefits valued at \$140,800. Therefore, patients who responded to second-line therapies received health benefit that exceeded the amount they paid for their treatment.

Colorectal Cancer



The researchers also applied the framework to data of patients with Colorectal Cancer. They found exponential growth in medical treatment costs since the late 1990s, from \$688 per patient in 1998 to over \$35,000 in 2005. While the average treatment cost considerably increased during this period, when the quality-adjusted cost of care framework was applied, the cost only increased modestly (by \$1,377 per patient) because of the corresponding gains in health not previously measured. Thus, when adjusted for value, the overall cost nearly broke even.

[Link to Health Affairs](#)

By: Augusto Gutierrez, USC Master of Public Policy Student, May 2016

USC Schaeffer

Lakdawalla received grant support from the National Institute on Aging (Grant No. PO1 AG033559).