



$$100 \times 2 = 1$$

A perverse quirk of health economics is that math is never straightforward. For example 100 patients taking a helpful drug for 2 years does not make 200 beneficial results.

Imagine a pill that helps ward off an expensive and devastating illness. Any patient who might get the illness wants to do everything she can to avoid it, naturally. Besides, taking the pill is less expensive than having the illness. The cost is even less for her because her health plan pays cost of the bill. Ninety-nine other patients and their physicians use the same logic.

Here is where the math goes awry. **Of the 100 patients on the drug, only one will actually avoid the illness in two years.** The other 99 would not have developed the illness, with or without the drug. Of course, no one knows at the beginning who is the lucky patient.

The one patient who won the benefit lottery would have cost \$50,000, had she become ill. The cost for everyone to avoid that one episode of the illness is \$336,000 over the two-year period.

For a single patient, the pill is cheap insurance: the total cost per year of the drug is around \$1600 compared to having the illness which would cost \$50,000. For the population as a whole, the “insurance” pays out \$0.15 for every dollar paid in. This is not to say that the one person’s suffering is not heartbreaking and worth effort to avoid. **The highlight is that for a population, health created by medical care costs more than the illness.**

Is the drug worth the cost? Your answer depends upon whether you look at the question for a single patient or for the population’s overall health.

P.S. The drug described here is Pravachol, which lowers blood cholesterol and thereby reduces a risk factor that may contribute to heart attacks. Yes, the drug does reduce the rate of heart attacks by 31%: 100 patients would have had 1.6 heart attacks in a year. Instead, they have 1.1, a savings of one-half of a heart attack per year. Since imagining one-half of a heart attack is difficult, I used two years to make the result a single (whole) heart attack.

by Linda K. Riddell, M.S.
Health Economy LLC
www.HealthEconomy.net