

The Impact of EAP Use on Health Care Costs

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I'm not going to talk about a cost benefit or cost effectiveness study per se, but many of the techniques that we have just heard about are applied in our study.

Before I go forward, I would like to acknowledge my co-author, Jeremy Bray, who has been a tremendous help. He has been responsible for the data construction, which is an enormous task, as we've just heard, and for the data analysis. Jeremy has been a co-contributor throughout the conceptual phase of the project.

I would also like to acknowledge the National Institute of Alcohol Abuse and Alcoholism (NIAAA). This research is part of a larger study on an EAP intervention that we've been analyzing.

Employers want to look at the costs and benefits of alternative health care interventions because they have limited dollars to use for fringe benefits such as health care interventions, and they want to know that they are getting the best deal they can. In particular, we're looking at EAPs and asking whether the benefits are greater than the costs. We're not doing a complete cost-benefit study of EAP use; we're just looking at one part of the supposed benefits of having an EAP.

Some of the benefits of having an EAP include improved job performance, reduced absenteeism, and reduced workplace accidents. I think there is some evidence that suggests that EAPs tend to improve these outcomes, although I think we can quibble about how strong that evidence is.

I think another very common expectation is that EAPs will reduce health care costs. Maybe that's more of a hope. It's not really studied that much. It's not clear that EAPs should reduce health care costs. Some EAPs talk about access to care as an important outcome of their services. And this raises the question that if EAPs are improving access to care, should we expect health care utilization to actually decrease? I think the answer is "no."

The whole notion of why people hate HMOs and managed care organizations is that they reduce access to care, which tends to reduce health care costs. So if EAPs are improving access to care, which some of them may do for some individuals—that may be one of their goals—are we surprised, or should we be surprised, if health care utilization should increase?

There are a couple of studies that have been performed that have looked at EAPs and health care utilization, but they are not very strong. One study, performed by the McDonnell Douglas Corporation in 1990, was limited by a small sample in the comparison group. The CDC study, also done in 1990, had other methodological problems. I think both of these studies found that EAPs actually tended to reduce health care utilization. But as I was saying, you really have to question whether the studies were methodologically solid.

In our study we looked at the relationship between EAPs and subsequent health care costs using state-of-the-art methodology. We have special data—panel data—so we're able to observe individuals over time for several years and do our analysis at the individual level. Also, we have data prior to the EAP and post-EAP visit. So we're able to use time-series variation for individuals to help evaluate what is going on.

We also use individual-level fixed effect methods to control for differences between people and look at variations within a person over time. Thus, if people have different propensities to use health care, we control for the variation across people, and just look at variations within a person.

So what did we do, and what did we find? We were fortunate enough to have EAP data, health care claims data, and some demographic data from a large Midwestern hospital that had an integrated EAP within the hospital. It is an integrated model, a very special case for an EAP; it's not an external model by any means.

We had data from January 1991 to December 31, 1995, and we looked only at claims data for employees, but we also used information on the dependents of individuals to figure out whether or not people were actually covered by the insurance plan.

One of the important points that Ron Goetzel didn't get a chance to talk about in his presentation is that often people don't have health claims in a given quarter. So if you observe that individuals had no claims in a quarter, you wonder if they truly did not have any claims, or if they were not covered in the plan at that time. People move in and out of health care plans, so to the extent possible, you want to figure out if an individual is covered by a plan.

The best data to assess health care coverage is plan membership information, and if you have that data, you're set. That data would tell you if employees were covered by a plan over a certain amount of time, and if they left the plan for a certain amount of time. Unfortunately, we didn't have that kind of information; all we had was claims information.

In our analysis, if people had a claim they were obviously covered in that quarter. We also used information on the dependents of the individuals to help pin down whether they were covered during a particular interval of time.

We aggregated the claims information to the quarterly level, and we also distinguished between ADM and all other claims. Most of my presentation today will be on the ADM claims.

In our study, we created four independent variables. I'm going to talk about two of them today. We had an indicator variable for any ADM utilization in a quarter, and then the

natural logarithm of ADM claims, for positive claims. (We also had an indicator variable for whether or not there was any health care utilization in the quarter, and a log of total health care utilization in that quarter, but I will not discuss these two variables today.)

I noticed in Ron's presentation that he talked about the kind of model that we are implementing—it's called a two-part model. First we have an indicator variable—zero or one, which indicates whether you have a claim—and if you had a claim, the second thing the model tells us is, how large was it?

What models did we estimate? Well, we had two types of variables, which as I said was either a zero or a one (or whether or not you had an ADM claim), and then given that you had a claim, we took the log of the claim. So Y_{it} represents two types of variables. Y_{it} is a function of indicator variables for quarters prior to the EAP visit. We used Q1 to Q8, representing one to eight quarters prior the EAP visit.

There was an indicator variable for the quarter that the individual visited the EAP, and we had indicator variables for Q1 to Q12, up to 12 quarters post-EAP visit. We had a dummy variable for whether or not the individual was a member of an HMO. Again, we didn't have great data on health insurance coverage. We had only claims data, and based on that we inferred whether the claim was from an HMO or not. We also had year-indicators to pick up effects that would happen within a year that would affect all people.

We tested for pre-EAP or ramp effects. Our specification was based on the alcohol treatment literature. As I noted, we were unable to find EAP literature that really looked at our question very carefully. The closest literature we could find was the work of Harold Holder and his collaborators, including Rick Lennox. In that literature, they discuss ramp effects associated with treatment. They found that health claims were increasing just before people went into alcoholism treatment. That increase was called the ramp effect. We included these pre-EAP variables to see whether or not claims were increasing prior to people going to the EAP.

We also estimated two samples: an EAP-only sample and a combined EAP and non-EAP sample. In the first sample, we focused on the timing of when people went to an EAP.

We did extensive specification testing on the length of the pre- and post-EAP effects, and we settled on 8 quarters pre- and 12 quarters post- EAP. Again, we were somewhat limited here on the length of the leads and lags we could estimate, given that we only had 5 years of data.

So let's turn to the results.

First, we plotted the data. Because some of the charges were zero, we added \$1 to each charge before we plotted the data. This is ADM charges only. There's a fairly large increase around the zero point, which is when the EAP visit occurred. ADM charges increased substantially, and then decreased a little bit, but never decreased back to the initial level over the time interval covered by our data set. And that's a nice summary of what we'll find with the more sophisticated models, too.

Here's a brief summary of our sample characteristics. I'm not going to spend too much time on it. We had 488 people in the EAP-only sample and 7,963 person-quarters. There were 3,370 people in the EAP and non-EAP sample, and 49,000-plus person-quarters. Another thing to note here is that this is a Midwestern hospital, and the work site is predominantly female.

The EAP-only sample includes people who at one time went to the EAP. We also had ADM claims for people who had never gone to the EAP. We looked at both samples. The EAP-only sample focuses on the timing of going to an EAP. We did a pre-and-post analysis for them. Then we examined differences in means between the EAP and non-EAP groups.

What did we find? We found some interesting results. If you came to this talk thinking that going to an EAP is associated with a decrease in health care utilization, you would be surprised, because we found very substantial results in the other direction.

We are looking at the odds of receiving ADM care for the EAP-only sample (only people who went to the EAP) and notice that in the quarter of the EAP visit, the odds of receiving ADM care is approximately 6. That is, an individual was 6 times more likely to have an ADM visit, and an ADM charge, in the quarter they went to the EAP relative to a steady state prior to going to the EAP. That's an enormous effect. And the odds of ADM care increase to 10 in the first quarter post-EAP visit and then start decreasing. So the odds of having an ADM visit were positively associated with going to the EAP. That increase in odds was pretty high, and the increase continues for at least 11 quarters post-EAP visit. At about that point it dropped off, but it is still pretty large at that point.

We did not have a pre-EAP ramp effect. If anything, we had a negative ramp effect. That is, the odds of having a claim were actually lower right before the EAP visit, not higher, as you might have expected.

These results focus on the odds of having a claim, but they do not say anything about the size of these claims. How much did the claims themselves increase?

The size of the claims, given that you have a positive claim, actually increased substantially as well. We estimate an approximate 150 percent increase in the size of the health care claim associated with the quarter of the EAP visit. And that tended to decrease fairly rapidly for about a year. After about six quarters, charges essentially fell to their pre-EAP levels.

So, according to the results we're getting, it looks like the odds of having some care were long-lived, but after a certain point these were not necessarily expensive visits.

Q Did you look at non-ADM claims, also?

A I've focused only on the ADM claims. But it turns out that we get the same kind of results for total claims. I focus on ADM claims here, because most of the claims associated with an EAP visit are expected to be ADM-type claims.

The total claims include ADM plus non-ADM claims. And the same qualitative results hold with the total claims.

We also asked the question, "Do the people who went to the EAP have higher charges or greater likelihood of having charges, compared to people who didn't go to the EAP?" We found the same kind of story. People who went to the EAP had greater odds of having ADM care, relative to the non-EAP people. We need little caution here, though; I think we have to be careful in making strong inference here because this is where selection bias is an important issue. The decision to use the EAP is endogenous, but we can't control that in the data that we have.

In any case, what our data shows is that those who went to the EAP had higher odds of receiving ADM care than those who didn't go to the EAP. And the same kind of result holds for the charges. The numbers are slightly different, but qualitatively they look very similar.

To summarize, as far as we could tell, this was the first study that performed a detailed evaluation of the relationship between EAPs and subsequent health care utilization. The previous studies had some real limitations.

Our results show fairly strongly that, unlike what you might have suspected—that EAPs are associated with lower health care utilization—, it looks like health care utilization is positively associated with going to the EAP, consistent with the notion of EAPs as improving access to care.

In talking to EAP directors, in particular the EAP director of this site, we heard "Oh, we're not surprised at all to see that. Our focus is to get people the proper care." But if employers expect that having an EAP reduces their health-care costs, it may not actually happen. If EAPs play an important role in improving access to care, utilization may increase.

Let me make a couple of other points. We did find results that are different from the alcohol treatment literature, which may also be surprising. That is, we found no pre-EAP ramp effect, but presumably people who are alcoholic are in worse shape or are more debilitated than people who are in the workforce, as in this EAP. So, that may not be so surprising.

I'll just note the limitations of our study. Again, it's a 5-year study. We'd like to have data for 10 or more years. Will the people who went to the EAP have higher costs 10 years out? I don't know.

Another limitation is that we are studying only one EAP, and that EAP may be a special case. One of the challenges faced by the CSAP grantees here today is to perform similar kinds of studies for your EAPs. We would love to work with you on those studies. Finally, the punch line. This is not a complete evaluation of an EAP. This is not a cost-benefit study of EAPs. Even though health care costs may rise, EAPs may still be cost-beneficial. We haven't looked at all the other benefits that may occur, such as improved workplace performance, decreased absenteeism, and reduced accidents.

So, a takeaway message for employers out there is, don't eliminate your EAP, but recognize that you may have higher health care costs, just as with any other medical conditions, and if an EAP improves access, you may have greater health care costs.