



# How to tell if your vendor's claims are valid: Part Four

*Inaccurate marketing claims and outcomes reports are proliferating. The Validation Institute has staked out a position as the leader in assisting/promoting vendors and consultants in the "Integrity Segment" of the healthcare services market.*

*How can you tell if your adviser is in the Integrity Segment? The easiest way: did they send you to this series or did you have to find it on your own?*

.....

Part Four shows how to use outcomes/risk reduction claims as a plausibility test for savings claims. The former drives the latter. If you reduce risk factors, for example, then way down the road you might see a reduction in heart attacks or diabetes events.

The first thing to understand is that it is very hard to actually reduce risk in a population. That's why vendors rely upon regression to the mean and participation bias to generate the perception of savings. Optimistically, [as acknowledged by Ron Goetzel](#) (the best-known wellness promoter): "It may take two to three years...to get a 1% to 2% improvement" in health behaviors. Improvements in health behaviors would then presumably translate into reduced risk for that 1% to 2% of your population, that would eventually prevent 1% to 2% of heart attacks and diabetes expenses. And that would save 1% to 2% of spending.

It turns out that this cascade of seemingly conservative assumptions is far too optimistic, for five reasons:

- (1) It is very unlikely that you will see even a 1% to 2% outcomes improvement from any validly measured behavior-based program. The recent randomized trials at University of Illinois and BJ's Wholesale Club confirm this. *Frontiers in Psychology* reports that wellness programs might have the reverse effect. And programs focused on weight may cause acute harm by exacerbating eating disorders.
- (2) A 1% to 2% change in health behaviors does not translate into a 1% to 2% risk reduction. The Illinois study showed some people changing their health behaviors, but reaped no change in risk factors.



- (3) A change in modifiable risk factors does not change total risk anywhere near proportionately, because genetics drive total risk too.
- (4) Due to the time lag between risk and actual illness, many of those 1% to 2% of employees who may have changed their health behaviors to possibly reduce their risk factors will have quit or retired before they reap the benefit of avoiding a heart attack or diabetes.
- (5) Hospitalizations for diabetes and heart attacks in the commercially insured population don't account for 1% to 2% of spend. For the most recent year for which good data was available, they account for about 6% of the 10.8 million hospitalizations. If hospitalizations are half of spending, a 1.5% reduction in 6% of them will reduce spending by a measly 0.45%.

**ICD-9-CM principal diagnosis code(s)  
250.00-250.93, 401-405, 410-414, 43**

		Total number of discharges
All discharges		2,802,219 (100.00%)
Payer	Medicare	1,593,919 (56.88%)
	Medicaid	289,120 (10.32%)
	Private insurance	620,445 (22.14%)
	Uninsured	212,540 (7.58%)
	Other	81,865 (2.92%)
	Missing	4,330 (0.15%)

**All discharges**

		Total number of discharges
All discharges		35,597,792 (100.00%)
Payer	Medicare	13,986,550 (39.29%)
	Medicaid	7,417,129 (20.84%)
	Private insurance	10,851,650 (30.48%)
	Uninsured	2,070,848 (5.82%)
	Other	1,216,485 (3.42%)
	Missing	55,130 (0.15%)



If that 0.45% of spending seems way off to you, it is. The decimal is in the wrong place. It's 0.045%. That means if you spend \$10,000/covered person, you save \$4.50/year, or about \$0.38/month. This is a bit lower than the claim from the Health Enhancement Research Organization, which is the wellness industry's lobbying/trade association. They claim wellness will save almost \$1/month in admissions. They have made the report unavailable, but the key display is this one:

	COMPARISON PERIOD			PY2		
	Prevalence	Hosp	Hosp/K	Prevalence	Hosp	Hosp/K
Member-months	210,000			211,000		
Member count	18,100			18,200		
IVD	2.1%	32	1.83	2.6%	25	1.42
CHF	0.2%	3	0.17	0.3%	4	0.23
Diabetes	2.4%	3	0.17	3.2%	6	0.34
Asthma	2.7%	13	0.74	4.3%	9	0.51
COPD	0.4%	4	0.23	0.6%	2	0.11
<b>PPH</b>	<b>6.6%</b>	<b>55</b>	<b>3.14</b>	<b>6.9%</b>	<b>46</b>	<b>2.62</b>
All-cause hospitalizations		702	40.04		685	38.96
All-cause except PPH		647	36.97		639	36.64
<b>Savings estimation</b>						
Trend: PPH						-17%
Trend: All-cause except PPH						-2%
Saved PPH/K						0.53
Saved PPH for population						9.26
Weighted cost/PPH						\$22,500
<b>Saved PPH cost</b>						<b>\$208,393</b>
<b>Saved PPH cost PMPM</b>						<b>\$0.99</b>

This is gross savings, not net savings. One might call it: "Savings before fees," because this \$0.99 does not include the program fees. To be truly accurate, one might call it: "Savings before fees and other costs," which are listed here:



- I. DIRECT COSTS
  - A. Program fees (which may include case management; medication adherence; biometric screening; employee assistance programs; health risk assessment; lifestyle coaching; on-site fitness facility or club discounts; decision assistance; triage/nurse line; injury prevention program; concierge services; on-site clinics: ergonomic/back health program: cost transparency programs; Provider support programs, etc.)
  - B. Incentive costs (to the extent they are incremental costs to the purchaser)
- II. INDIRECT COSTS
  - A. Employee time (biometric screening, etc.)
  - B. Communications/Print materials
  - C. Data systems and reporting
  - D. Contract personnel
  - E. Legal review
  - F. Facility space
- III. TANGENTIAL COSTS
  - A. Employee morale
  - B. Company reputation
  - C. Legal challenges
  - D. Selection effects (on employee population)

To be really, really accurate, we should include what is listed in this snippet too, and call the \$0.99/month: “Savings before fees, costs and increased medical claims”:

services. While we focus on decreased impactable utilization here, it is important to recognize that EHM should increase the use of certain services, such as preventive and screening services, certain chronic medications, and outpatient visits. It is even possible to see a rise in ER and urgent care visits as well-informed patients learn to get urgent medical care when they experience early warning signs of stroke, asthma, or heart attack.

Nonetheless, we will give the entire benefit of the doubt to the wellness industry’s set of assumptions above that are so optimistic to make [Pollyanna](#) blush.

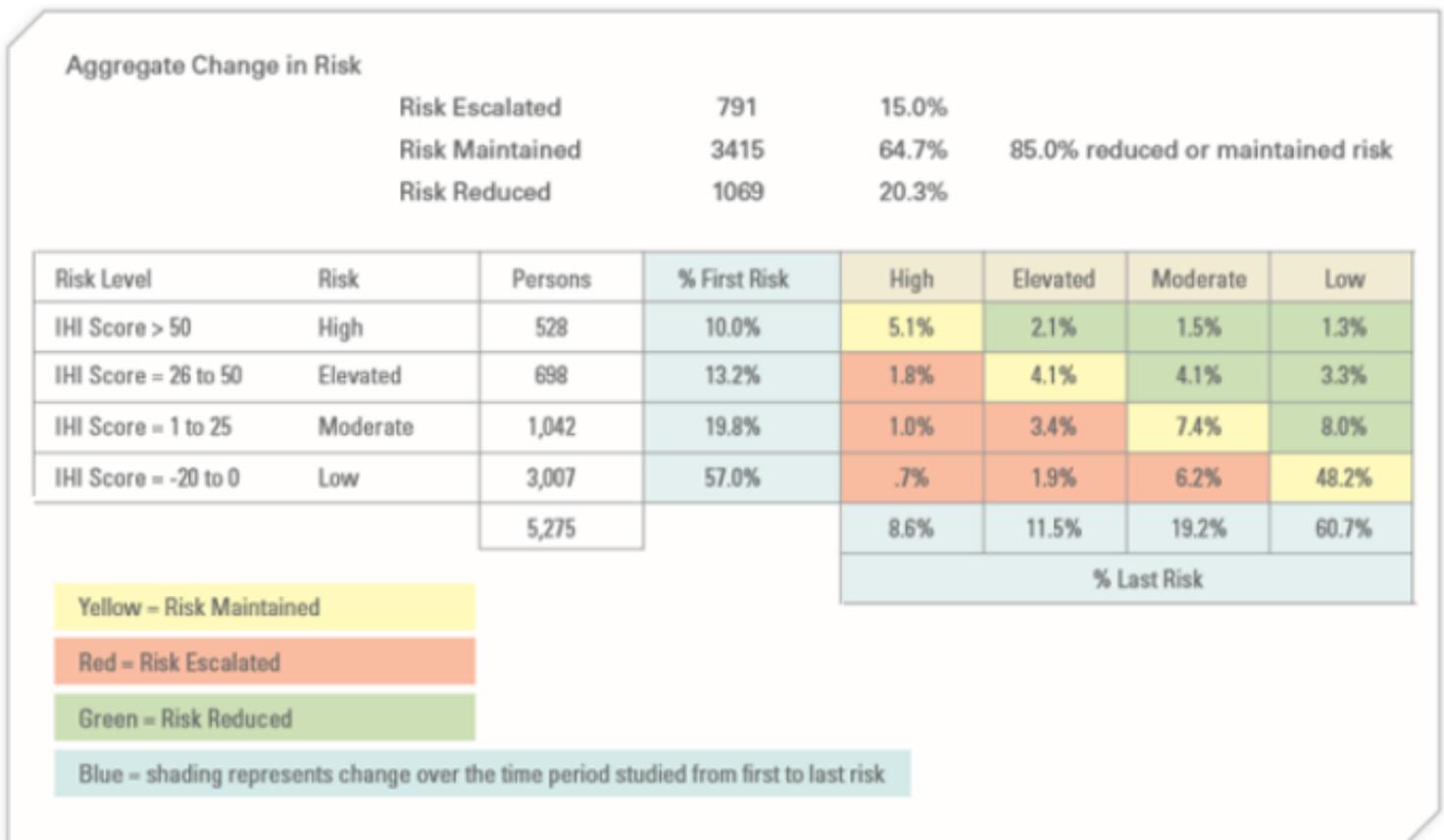
Ignoring the clear admission to the contrary, we will assume that the roughly \$12/year has no offsetting fees, costs or medical claims. And ignoring all dropouts, we will assume that employees do achieve Mr. Goetzl’s projected 2% risk reduction. That means for each percentage point of risk reduction, \$6 is saved. Keep that in mind as you read what vendors claim...and a simple division can be used to check the plausibility of those claims.

## Applying the plausibility test

Vendor outcomes reports generally include a reduction in risk, blood pressure, cholesterol, weight etc. among people who didn't drop out. That reduction usually isn't much different from Mr. Goetzel's projection.

Using the wellness industry's highly aspirational assumptions and THC-infused logic above, the best-case savings figure should look something like that \$6 per risk factor reduced. The rest of this article will show you how to do this calculation as a plausibility test of the alleged savings. You simply divide the savings by the risk factor reduction achieved. This division produces what is known as the Wishful Thinking Factor, or WTF. Let's look at some examples.

You may recall this example from [the installment on regression to the mean](#):





[That regression-to-the-mean installment](#) focused on the red and green cells, showing how low-risk cohorts tend to become riskier while high-risk cohorts tend to become less risky regardless of any intervention.

This time, focus on the top of the chart, where (excluding dropouts and non-participants, of course), 1009 risks are listed as reduced while 791 increased, for a net of 228 risk factors reduced on 5,275 people, or roughly 0.4 risk factors per person.

For this WTF division, consider the vendor's savings claimed by industry sector:

- Financial Services: \$1,332 annual savings per member
- Manufacturing: \$792 annual savings per member
- Distribution: \$288 annual savings per member

To calculate the WTF in, for example, distribution, divide the \$288 in annual savings by 0.4. This gives you a WTF of \$656 per risk factor reduced. The other two industries would show a four-figure WTF. The report has been pulled down, so we can't link to it. You can source the original from Robin Foust of MyCatalyst Consulting, who wrote the original report.

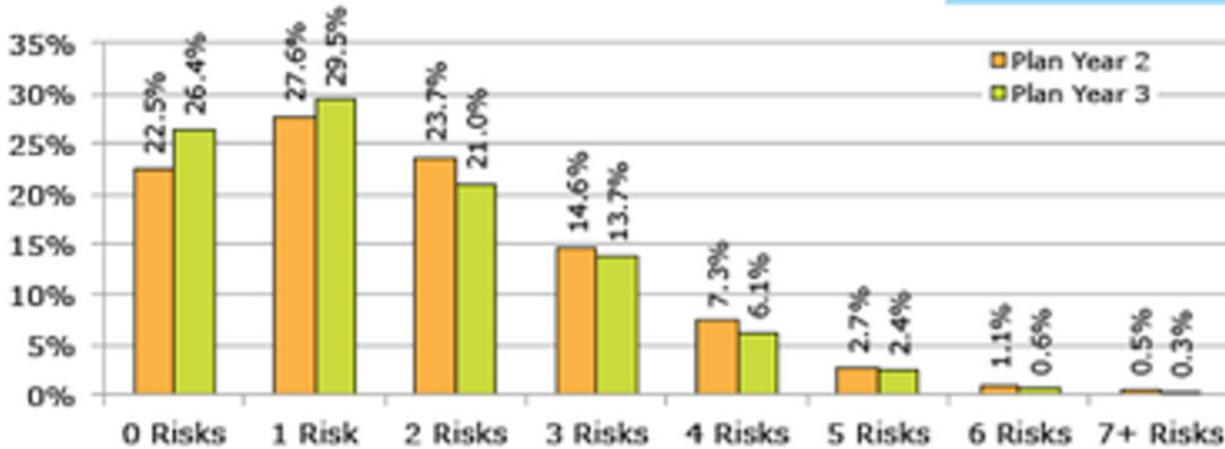
### ***Nebraska State Employee Program***

Here is another example, from the C. Everett Koop Award-winning, [albeit highly controversial](#), Nebraska state employee wellness program. The change in risk factors is as follows:



### 2010/2011 Change In Risk Factors (5,199 Participants)

**\*Average Number of Risks Per Participant**  
2010.....1.72  
2011.....1.55



# of Risks	Plan Year 2 %	Plan Year 3 %
0-2 Risks (Low Risk)	73.8%	76.9%
3-4 Risks (Moderate Risk)	21.9%	19.8%
5+ Risks (High Risk)	4.2%	3.3%

The total number of risks reduced on these 5199 repeat participants -- excluding the hundreds who dropped out, of course -- was 161.

The total savings claimed, as you can see from the article, was \$4.2 million, yielding a WTF of \$26,000 per risk factor reduced. To put this in perspective, the average person spends \$10,000/year on healthcare as a whole.

### McKesson

McKesson's [highly controversial](#) Koop Award-winning program (are you seeing a pattern here?) made a table of its before-and-after risk scores:



	Risk Factor	Members	Stayed at Low Risk	Increased to Elevated Risk	Stayed at Elevated Risk	Decreased to Low Risk	Significance Indicator	Net Change in Risk
Biometric	BMI	2,437	43%	5.0%	46%	6.1%		-1.1%
	Cholesterol	2,443	58%	10.3%	21%	10.4%		-0.1%
	SBP	2,438	58%	12.6%	14%	15.3%	↓	-2.7%
	DBP	2,438	71%	9.9%	6%	12.6%	↓	-2.7%
	Glucose	2,431	79%	7.6%	7%	6.1%		1.4%

As we saw with Wellsteps in [the previous installment on comparisons to trend](#), one rule of outcomes evaluation is: when a vendor does not add up columns of numbers, add them up yourself. The same is true here. Once the impressive decreases in risk are netted against the increases, the average risk reduction for the five measured variables was about 1.04%. But instead of saving \$6, they [claimed \\$916](#) (scroll to page 10), yielding a WTF of \$880. (They reported many different savings figures, so it's a bit hard to pin down. It's even hard to pin down their risk reduction, as the linked article above points out that their average weight increased and decreased at the same time.)

***US Corporate Wellness...and the classic vendor defense.***

On another occasion, the vendor calculated their own WTF, sort of. Technically, this WTF would be infinite:

The image shows a banner for US Corporate Wellness. At the top left is the logo 'US CORPORATE WELLNESS' with the tagline 'Superior Service. Real Results.' Below the logo, the text reads '\$350 The Annual Savings Per Employee Who Does Not Increase Any Health Risk Factors'. In the top right corner, there are links for 'Register | Login | Q' and logos for 'urac' and 'MILWAUKEE'. Navigation arrows are visible on the left and right sides of the banner.



This brings up the question – that vendors will fall back on when you point out that risks really didn't decline: "Yes, but they would have risen because our population got older."

No one can really say how much the increase due to age is. People are more likely to gain weight and see increases in cholesterol and blood pressure...but are also more likely to get their tobacco use and drinking under control. The average risk in the Nebraska chart is 1.72. Suppose people go from 0.5 risks to 3 risks over 50 years, averaging about 1.75. That's an increase of 2.5 risk factors in 50 years, or 0.05 risks per year.

Make the assumption that the risks would have risen by that amount for US Corporate Wellness. Dividing their \$350 by 0.05 yields an WTF for US Corporate Wellness of \$7000 per risk factor avoided.

At least it's more plausible than infinity.

### ***Testing for plausibility: summary of the WTF***

Calculating the WTF should now be easy. Start with the number of risk factors reduced. Keep in mind that the risk reduction has to be across the entire population, of course. That was covered in the [first installment](#). So, in the case of Robin Foust's calculation above, you don't divide by the 1009 factors reduced. You divide by the net change in risk factors (228).

Divide the total savings by the total number of risk factors reduced across the population, just like we did above. Once you have the answer, call up the vendor and say: WTF???

### **Coming Next**

Part Five is two parts in one. The first half will offer you questions to ask the vendor. It is best to ask them in person, but in an RFP as well. The second half will look at the latest fad, which is vendors getting themselves peer-reviewed in academic journals. You will learn to distinguish true peer reviewed publications from ads disguised as peer review.