

February 27, 2013

UAF Faculty:

The letter below is from Dr. Nalinaksha Bhattacharya, UAA College of Business and Public Policy and past president of the UAA Faculty Senate. He is currently one of three faculty representatives from United Academics on the university system's Joint Health Care Committee (JHCC). The other two are Abel Bult-Ito and Leah Berman from UAF.

I have some concerns about the Health Care benefit design process in the UA system. I hope you will be able to discuss these as health care is an important issue for all of UA.

My concerns are as below:

1. I think we need to look at our Insurance scheme urgently. Anecdotally I have heard from a few staff members that many of them have started treating our current insurance plan as a catastrophic insurance plan because of the high deductible. That means that they will not go and see a doctor till things start bulging out of their bodies or till they start bleeding heavily. A high deductible acts as a disincentive for visiting a doctor especially when you are low income.
2. Ultimately we need to try out a new policy and see its impact. I have designed a tentative policy. It is attached for your perusal. I have given the rationale for my suggestions. Clearly the current scheme is not working. So may be we can suggest a new policy for say 5 years. At the end of the five years we should sit down and evaluate it.
3. From the literature I have read, it appears that health care costs nationally are described best by a Log-Normal distribution. Now our consultant Lockton should have tried to see whether a Log Normal distribution fits our healthcare cost data. We should ask Lockton to answer this question.
4. Another thing that we should ask Lockton is to develop a time series model for our PER CAPITA HEALTHCARE COSTS. There are standard time series models like ARIMA and by now they should have tried to fit one.
5. From the employees point of view here are the three things that they are spending on their health care:
 - A. The Premium (i.e the payroll deductions)
 - B. The Deductible.
 - C Total expense towards Co-Pay.

Please note that the above has to be interpreted in AGGREGATE. I may never get sick and just pay the premium while someone else might reach the Out of Pocket Maximum. Since ours is a self insured plan so in AGGREGATE the EMPLOYEES should pay 18% and in AGGREGATE the UNIVERSITY should pay 82%. ***The employees share should include the PREMIUM they pay. I am getting the impression that the Premiums (i.e the pay-roll deductions) are not taken into account in determining employees share of the cost.***

6. I am attaching two files. The first one is called Suggested_Health_Care_Plan_for_UAA_Draft_1.pdf This is a suggested health care plan for sharing the health care cost in AGGREGATE between the University and the employees.

The second one is a mathematical model and is not essential to the discussion. It is called Model of Health Care Plan_Note 1.pdf This model just establishes that in a self insured system with splitting of costs the Premium (i.e the payroll deductions) will be zero. It is included here for completeness.

7. Whenever I have talked about my proposed plan, I have had two queries.

A: Who is going to fund the initial fluctuation reserve?

B. I am healthy and I take care of myself. Why should I pay for someone not responsible enough to take care of his/her health?

Regarding the first concern, the fluctuation reserve can be a budget item with an authorization limit of say the highest aggregate cost towards medical care in the last five years. The fluctuation reserve functions just like a line of credit.

Regarding the second concern, we are insuring each other ex ante. The medical cost occurs ex post. So all of us will pay the premium so that all of us will have medical treatment when we need it and none of us will lose our homes just because we were unfortunate enough to be afflicted with an illness. Also most of the medical "causes" are actually correlations and we know that correlation is not causation. It should be noted that every industrialized country has a policy of universal coverage. The closest neighbor to US, viz. Canada, is one such example.

With best wishes.

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College of Business and Public Policy

UNIVERSITY of ALASKA ANCHORAGE

September 6, 2012

A Suggested Health Care Plan for the UA System- Note 1 Preliminary and Incomplete. Do not cite without permission

1. Broad Features of the Suggested Plan

- (a) There shall be one plan for all employees of the University.
- (b) In the first year of the proposed plan (Year 1), the University will establish a *Fluctuation Reserve F* of say \$5 Million. This amount is stated just for ease of exposition. The exact amount of this reserve shall be determined after due deliberation and will be subject to revision.
- (c) In the First year of the Insurance Plan the features will be as below.
 - Premium = 0
 - Deductible = 0
 - Co pay = 20% will be paid by Employees and 80% by the University.
 - Out of Pocket Maximum = M . Say \$ 11000. (I have arrived at this figure by adding the current figures for Family Deductible and Family Out of Pocket Maximum under the HDHP plan.)
- (d) In the first year whatever health care costs are not recovered through Co-pays will be paid out of the *Fluctuation Reserve*. From the second year of the plan the premium shall be determined by looking at the depletion of the *Fluctuation Reserve* in the previous year. That depletion shall be recovered by sharing it between the employees and the University in the ratio of 18% to 22%

2. **Rationale for the Suggested Plan.** We have kept the deductible zero so that if an employee feels that he/she is coming down with something then there is no disincentive for the employee to **NOT** see a doctor. Replenishing the fluctuation reserve through Premiums from the Second Year onwards means that we are not trying to estimate costs at all. Rather the costs will be recouped on an actual basis with a lag. In the steady state all costs will be recovered and the University system will become self-financing.

3. **Other Comments.** Employees will be required to give one year's notice in order to opt out of the program. This is required so that employees cannot take advantage of the zero premium in the first year and quit the plan in the second year. Exceptions to this policy shall be made in the event of the death or retirement of the employee or the termination of the employment relationship.

With best wishes



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May 22, 2012

A Model for Designing a Health Care Plan for the UA System- Note 1
Preliminary and Incomplete. Do not cite without permission

1. Notations

| | |
|----------------|--|
| P | Per Capita Premium |
| d | Per Capita Deductible |
| M | Per Capita Out of Pocket Maximum Cost. |
| \tilde{x} | Per Capita Health Care Cost- A continuous random variable over a support of 0 and ∞ . |
| $f(\tilde{x})$ | Probability density function for \tilde{x} . |
| ϕ | Co-Pay percentage. |

2. **The Principle.** The model is based upon the principle that UA is a self insured system. Therefore the total *expected* payment should be equal to the *Expected Health Care Cost Per Capita* or $E(\tilde{x})$.

3. The Model

Employees pay the following *in expectation*.

| | |
|---------------------------------|--|
| P | Per Capita Premium |
| $\int_0^d x f(x) dx$ | Per Capita Deductible paid by the employee <i>in expectation</i> |
| $\phi \int_d^M x f(x) dx$ | Per Capita Co-Pay paid by the Employee till Out of Pocket Maximum <i>in expectation</i> . |
| $(1 - \phi) \int_d^M x f(x) dx$ | Per Capita balance of the cost not covered by Co-Pay and paid by the University till Out of Pocket Maximum <i>in expectation</i> . |
| $\int_M^\infty x f(x) dx$ | Per Capita balance of the cost paid by the University after Out of Pocket Maximum <i>in expectation</i> . |

$$\begin{aligned}
P + \int_0^d x f(x) dx + \phi \int_d^M x f(x) dx + (1 - \phi) \int_d^M x f(x) dx + \int_M^\infty x f(x) dx &= E(\tilde{x}) \\
\Rightarrow P + \int_0^d x f(x) dx + \int_d^M x f(x) dx + \int_M^\infty x f(x) dx &= E(\tilde{x}) \\
\Rightarrow P + \int_0^\infty x f(x) dx &= E(\tilde{x}) \\
\Rightarrow P + E(\tilde{x}) &= E(\tilde{x}) \text{ because } E(\tilde{x}) = \int_0^\infty x f(x) dx \text{ by definition of the Expectation operator.} \\
\Rightarrow P &= 0
\end{aligned}$$

4. **The Implication** The implication is that under the principle of self insuring the premium should be set to zero. Assuming that the share of the employees and the share of the University is in the ratio of 20% to 80% then the co-pay could be fixed at 20%. The out of pocket maximum could be fixed for some catastrophic illness like cancer, renal failure and heart ailments. The out of pocket maximum needs to be fixed for these high cost diseases on the principle of welfare.

With best wishes



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