A Step Towards Fellowship: My Experiences as an Actuarial Intern and Student

Honors Thesis

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Purpose of Thesis

This document serves as a compilation of four years in the actuarial program at Ball State University with a heavy emphasis on summer internship experiences. Included in this thesis are basic background information and observations, a detailed discussion of the process of obtaining internships, in depth discussions of my two summer experiences, and some observations in retrospect.
Preface

My purpose in writing this discussion of actuarial college experiences is manifold. Perhaps on its most basic level, the completed project will offer a detailed description of the entire internship process, from the initial stages of inquiry and interviewing all the way through two summers' experience. Perhaps future undergraduates may find this to be helpful in deciding their internship paths (or even possibly their career paths). Four years ago, I set out with much uncertainty on the actuarial path, and something such as this project would have been a treasured source of information to me at that time.

However, I believe this thesis to be more than just a chronological journal of events. Through the sequence of events before, during, and after my internships, I hope that the total experience is shown to be an integral (albeit fledgling) step in a challenging career that will someday culminate in the opportunities that accompany attainment of fellowship.

Finally, I hope that a feeling of personal and professional growth is exhibited in the following pages. Throughout my college years and especially during the two years since my first professional actuarial experience, my perceptions, hopes, and attitudes have most certainly been altered. Hopefully I can communicate some of these changes (and how they came about) to the reader.

Gregory D. Turner
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I. Background

I guess the story should begin by explaining how I became involved with the actuarial science program at Ball State. Actually, I came to Ball State already intending to study actuarial science. One of my high school math teachers had suggested I look into the field while still in high school. I did a little research, and, through a mutual friend, was lucky enough to be able to meet with a retired actuary to discuss the profession. I'll admit, after speaking with him, actuarial science did not sound like the most exciting career in the world! However, I was very undecided as to what I wanted to study, so I came to Ball State and declared the actuarial major. I figured that if I didn't enjoy it after two or three years, I would still be able to obtain a math degree, and this would be very versatile at the least.

After arriving at Ball State, one of my first "actuarial experiences" involved a meeting of the actuarial science club during my freshman year. I think it was the very first meeting of the year, and, wanting to get involved as quickly as possible, I attended. I remember that each of the officers introduced himself or herself to the group. In doing so, they also told us how many exams each one had passed as well as the names of companies with which they had interned. This was my first contact with the thought of an actuarial internship. However, I had been at school only a month, and the club officers were all juniors and seniors. Feeling very much like an inexperienced freshman, I put the issue of internships on the shelf for a time. After all, I had plenty of time and I was adjusting to campus life and all of its possibilities.

When the internships were mentioned at the meeting, I began to form what could be called my first impression of an internship. Of course, I really had no idea of what one was actually comprised, but, as with most things, people develop certain ideas almost instantly upon hearing about a topic that will eventually become a part of their lives. I think this first impression can be summarized as follows: during my first two years of school, I would learn enough that would enable me to perform the requirements of these
internships. Ball State would then place me with a company, and I
would spend a summer somewhere learning a great deal about the
actuarial profession. After this experience, I would have a much
clearer picture of the field I had chosen to study, and I would
hopefully be encouraged to push forward towards completion of an
actuarial degree. Like I said, this was the opinion I formed only a
few weeks into my college career, and in retrospect, I believe it to be
not totally incorrect, but definitely in need of revision!

As previously mentioned, I filed away for a time the subject of
internships. After I became accustomed to my classes and college in
general, I began again to think about summer employment. Could a
freshman possibly obtain an internship? I began to investigate
casually. With some help and advice from a few upperclassmen, I
managed to learn that most students interviewed for internships
after their junior years. However, they also mentioned that
whenever I passed the first exam I should interview for the
following summer. Even if nothing came of it, the interviewing
experience would be a valuable learning experience. Looking back, I
think that I was relieved to hear that I wouldn't be interviewing for
at least a year, maybe two. I was in no hurry to begin real life.

After speaking to those upperclassmen, I didn't give much
more serious thought to summer jobs until my sophomore year.
When I arrived at the fall semester of that year, I had decided to sit
for Exam 100. I had already taken the first two courses in the
calculus sequence, and I was enrolled in the third. I believed that I
would be at least exposed to the majority of the material by
November. Besides, I had heard that many people do not pass on the
first attempt, so I believed that at the very least, it would be good
experience and preparation.

November came and I took the exam. I had no concrete feeling
as to whether I passed or not coming out of the exam, so I simply
tried to forget about it for six weeks. I received my exam results on
December 21 of that year. Christmas break had begun, and I
received an early present in the form of a passing score. Needless to
say, I was elated. Immediately I began to think about the possibility
of a summer internship.
II. The Interview Process

Upon returning to campus, I began the rugged journey along the interview trail. To this point, I knew that going through Career Services seemed to be a key step in pursuing an internship. However, I was unaware of the difference between Career Services and Career Services West. After some investigation, I learned that Career Services West was the place to be for internships.

I proceeded to discover the exact process for applying. The first step was to register, which consisted of completing a form and requesting three letters of recommendation. Alongside these requirements, Career Services required that I attend an "interviewing seminar." This was a short session that gave some basic, common-sense guidelines for interviewing (be on time, be prepared, don't wear jeans and a tank top, etc.).

When these obligations were fulfilled, I was eligible to interview. I think that before discussing actual interviews, the time frame of the process needs to be stressed. Classes began the second week of January. The registration process, including the seminar, took about a week. Normally, securing letters of recommendation might take more than a single week. However, I was fortunate in that my professors from whom I had requested letters were very understanding when I asked them for quick responses. This carried me to the third week in January, and this was just in time to be eligible for the first important week of interviews. The point I am trying to make here is that the interviewing process is very under-publicized, and many people miss out by waiting until it is too late. An ideal strategy would have been to have applied late in the first semester, thus eliminating the intense rush caused by waiting until January.

This leads me to the scheduling of interviews. The process, in a nutshell, goes something like this: you drop a resume off at Career Services West for each company with which you would like to interview. You must do this three weeks in advance of the actual week during which the company will come to campus. Career Services then sends the resumes to the chosen companies. If they
like your qualifications, they will select you for an interview. Finally, you actually sign up for the interview by accessing a special VAX environment designed specifically for interview information and sign-ups.

If this seems like a prolonged, arduous endeavor, it is. I will say that it is probably much more convenient than being forced to send resumes directly to companies in hopes of gaining an interview. In the grand scheme of things, the momentary inconvenience is worth the benefit of on-campus interviewing.

The Interviews

In my first attempt at actuarial employment, I decided to throw my hat in the ring with everyone. Eight employers came to campus in February of 1991, and I interviewed with each one. Lincoln National (Fort Wayne), The Associated Group and American United Life (both from Indianapolis), Time (Milwaukee, WI), CNA (Chicago, IL), AAL (Appleton, WI), Nationwide (Columbus, OH), and The Principal Financial Group (Des Moines, IA) comprised the list of companies with whom I would interview. I basically knew nothing about any of these companies prior to this time. Being naturally nervous about my first "real" interviews, I gathered information on each company form the Career Services library and began to try to memorize some quick facts that could be recited if ever I were to be confronted with the feared question "tell me what you know about our company."

To recount each individual interview would be utterly redundant. Rather, a general commentary on the interviews as a whole with some specific examples may be more valuable and concise.

To tell the truth, I do not recall with whom I first interviewed. This seems strange, but after over 20 interviews in the course of three years, some of these begin to blend together! Overall, the interviews were not difficult. Most merely entailed a discussion of my resume with the company's representative. I was never asked to tell someone what I knew about their company. Personally, I feel
that this is a terrible question (at least at this level), showing no more than the ability to memorize a balance sheet and spew out figures. However, I was asked the question "Why do you want to work for _____?" In this case, the company was Lincoln National. I responded by saying that I knew a bit about the program through students who had worked there and enjoyed it, and that from this knowledge Lincoln seemed like a good match for me. Other difficult questions were ones such as:

- Describe your strengths and weaknesses.
- Give an example of a time you failed at something.
- Why do you want to be an actuary?

As the interview process concluded, the next step was to hope for a second interview or an offer. A few weeks after my last interview, I began to receive some calls. Nationwide was the first company to contact me. They requested a second interview, and of course accepted and set up an appointment. Soon thereafter, Lincoln called. They made an actual offer over the phone for an internship with a pay rate of $385.00 per week. There was no second interview required, and I was happy about this. I didn't accept right away; I wanted to play the field and see if anything else would materialize.

I think it was the very next day that American United Life from Indianapolis called for a second interview. They were high on my list because of their Indianapolis location, so I agreed to come to the home office the next week. That interview was much like the on-campus interview, except that I repeated it for two different people. By the end of it, I made sure to mention that I had an offer on the table from Lincoln (I figured that if there was an interest on their part, this would ensure a quick response). True to my thoughts, the AUL representative called me within two days with an offer. This offer was for $9.65 per hour and no relocation allowance was included. Lincoln had offered $650.00 to help with moving expenses.

I was faced with a dilemma. Financially, Lincoln was clearly the better offer. Lincoln's work week at the time was 37.5 hours; with the offered salary of $385 per week, that works out to be $10.27 per hour. This, coupled with the fact that Lincoln had offered a living allowance, gave Lincoln the edge from the money side of
things. However, I liked Indianapolis' size and opportunities better than Fort Wayne's. I had always thought that I would enjoy a big city, and by taking the AUL offer, I would be able to either substantiate this thought or dispel a myth. The final and probably deciding element in my decision was that, from what I had heard, Lincoln was a strong company with a good summer program.

I struggled with it for a few days and eventually decided that Lincoln was the better choice. I then canceled my second interview with Nationwide and waited for the summer and Lincoln.
III. My Time at Lincoln National

Day One

When I arrived at the Lincoln building for my first day of work, I really had no idea what to expect. Would I be expected to have prior knowledge of anything in order to do well? Would I use any math? Basically, what the heck would I be doing? I had all the normal fears and worries. The greatest fear was the feeling that I would be expected to know things which I didn't. What a misconception! Logically, I should have realized that students do internships every year. Those students take the same classes that I take. They aren't born with special faculties that propel them to successful internships! However, nerves prevailed over logic that day, and I was filled with much trepidation.

My first order of business as a Lincoln employee was a brief orientation meeting. This lasted a few hours and covered tax forms, company policies, etc. After this I was escorted to what would be my new home for the next three months: the Personal Accident Reinsurance Department. What this meant was that we provided catastrophe reinsurance, mostly to smaller companies who wanted to put a limit on their risk. I interrupted an informal staff meeting and was introduced to everyone. This included my boss, Dale Vollenweider (who is an FSA), Ron Roberts, who was the rotating actuarial student at the time, three underwriters, one accountant, and the secretary.

After introductions, they continued with the meeting and I, feeling a bit insecure, began taking notes which, in retrospect, was probably not actually expected of me. However, it kept me busy throughout the remainder of the meeting and provided me with something immediately tangible. Important or not, by taking notes I felt like I at least marginally belonged.

Directly after the staff meeting, Dale talked to me for about a half-hour in his office. He brushed over a few possible projects, told me a bit about what he did as head of Personal Accident Reinsurance (PAX for short), and answered a few of my questions. When we
were finished, he handed me three manuals: DOS, Quattro-Pro, and INFO. He then told me to familiarize myself with these, and that was when I became very nervous.

I had taken the Pascal course at Ball State the year before, and I knew some BASIC, but I had never touched a spreadsheet or database before. And there I sat, three manuals in front of me; completely foreign territory. I opened the Quattro (which is a spreadsheet similar to Lotus) manual and began to read. And basically, that was what I did for the remainder of the day. At 4:00 p.m., I left the office feeling very overwhelmed.

**The Rest of the Summer**

I spent most of the first week trying to make some sense of the computer tools. Actually, it was much easier than I had initially thought to become at least familiar with the spreadsheet and database. I began to debug some old spreadsheets and database report generators. Within the month, I was able to program simple tasks in the database as well as create some new spreadsheets for the department.

As far as day to day work, that was the bulk of it for most of the summer. Not the most exhilarating work, but I really didn't expect it to be. Near the end of the summer, I was assigned a research project. The department had a buildup, four years worth, of a publication called *World Loss Reports*. Contained in their pages were listings and descriptions by date and area of catastrophic accidents. Earthquakes, bus accidents, fires, and many more were described along with a listing of the number of deaths caused by these catastrophes. My boss was contemplating formulating a new pricing model, so he gave me a task that, upon completion, would help him in this project. So for about three weeks I sifted through a huge stack of these loss reports, tabulating numbers of deaths by area and type of accident. Once finished, I placed the information into spreadsheet form using Quattro-Pro. This extensive use of a spreadsheet was a direct application of something I had begun to learn the first day of the summer and, by the time I had finished, I
had a spreadsheet containing over 2500 lines of data! Once again, this was all basically "grunt" work, but this is what summer interns are hired to do!

By that time, my summer was nearly complete. I feel that my actual work at Lincoln entailed mostly what I have described: spreadsheeting, proofing others' work, and plenty of research. As I have also mentioned, the work was not very exciting as a whole. However, a summer intern cannot expect to come in and be entrusted with anything of significant importance. Simply put, there is just not enough time in a summer to put the effort into training someone who will be gone in three months.

One interesting aspect of Lincoln's program was our weekly luncheons. There were 19 interns in total, and each week we would gather with an officer or manager from various parts of Lincoln. We typically would meet in one of Lincoln's banquet rooms for these excursions. We would relax and eat lunch for about 45 minutes, and shortly thereafter our guest would speak for about an hour. For example, we had people speak to us from areas such as reinsurance and investments all the way up to the CEO himself. The neat thing was that each person who spoke to us had been or still was an actuary. This gave an interesting view not only on the company itself, but also on the opportunities presented by a career in actuarial science.

What did I take away from my first summer experience? Well, there were two major benefits for me. First of all, my exposure to the computer and its applications all summer was invaluable. Computers are an integral component of actuarial science, and before Lincoln, I had very little exposure to computer applications. I believe that the actuarial program at Ball State would do well to require a class on Lotus spreadsheeting. This seems to be the most utilized tool, and students would be much more impressive if they were already well-versed on the subject before beginning an internship.

Secondly, the total experience was beneficial. The business environment was a totally new arena for me. Gaining familiarity with such an environment, if only for a short time, created a picture
in my mind of what to expect in the future. It would be a very
difficult situation to be entering a permanent position with not much
knowledge of an office environment. In this way, my first internship
helped to prepare me somewhat for the years to come.

Finally, although the experience was very positive overall, I
still was bothered by the fact that I remained very unclear as to
what actuaries really do. Dale (the FSA who was my supervisor) was
also an Assistant Vice-President. He was in meetings or traveling
much of the time, doing things I would consider more managerial. I
was encouraged by this because eventually I would like to be more
of a manager as opposed to a technical actuary. But still I wanted to
know what I would be doing for the time before I arrived at that
position. I finally accepted the fact that the only way to learn more
was through more experience, and after another year of school, I
began work with a different company: The Associated Group in
Indianapolis.
IV. Summer 1992: The Associated Group

The interview process the second time around was basically identical to my first experience. Most of the same companies came to campus, but I only interviewed with five companies this time. The format and questions during the interviews were familiar. I began to feel like a professional interviewee!

When deciding between companies for a second internship, I chose The Associated Group for two basic reasons. First and foremost, I wanted to go somewhere other than Lincoln in order to get another view on the profession. Secondly, I really did want to work in Indianapolis. I had lived in Fort Wayne for a summer and, although I didn't mind Fort Wayne, I wanted to experience life in a larger city. I received offers for second interviews from Allstate in Illinois and from Cigna in Connecticut, but when I got the call from The Associated Group, I immediately accepted.

I began work during the third week of May. I had taken a few weeks off after school in order to prepare for Exam 110 and to relax a bit before beginning the summer's work. During those weeks I visited The Associated Group's office building. It is located directly on Monument Circle in downtown Indianapolis, and it really is a beautiful building. This enhanced my anticipation to begin work and experience something new.

My first day as an employee of The Associated Group (acronym: TAG) was very similar to my first day at Lincoln. I was taken to the Actuarial Department, introduced to various people, and discussed my expectations with my supervisor. I learned that I would be working in the Health area in the Individual-Under 65 division. After this, I took two SAS (a computer language) manuals into my office and began to familiarize myself with them.

One immediate difference between TAG and Lincoln was in the structure of their actuarial departments. Lincoln does not have a centralized actuarial department, whereas The Associated Group's actuarial staff was located in one specific area. The Associated Group's staff was also much smaller in total; about 25 people in the department. My first impression was that I would be able to see
more of what actuaries do instead of having little or no contact with ASA's and FSA's.

Another difference that I initially noticed was the age of TAG's staff compared to Lincoln's. Everyone was very young, and I feel that this created a more relaxed atmosphere. Lincoln's environment had seemed very traditional and institutionalized.

So my first day was one that was spent learning about SAS and TAG's database structure, but I was also constantly comparing my new job to my Lincoln experience. In the back of my mind, I think I was hoping to thoroughly enjoy The Associated Group and hopefully impress them enough that they would offer me a permanent spot upon graduation.

The Rest of the Summer

As with Lincoln, it would be boring and wordy to give a day-by-day account of my duties at The Associated Group. I have broken my tasks into three categories that I will briefly discuss: programming, spreadsheeting, and my research project.

First of all, I did a fair amount of SAS programming throughout the summer. None of it was extremely difficult, however. For example, one program I wrote found the average age of certain policyholder groups in different states. This amounted to accessing the database and writing a very short, simple program. Another program of mine totalled the numbers and amounts of claims for different groups. Once again, nothing real difficult. Programming is very much a part (at least initially) of an actuarial position. The positive side of this is that the programs are usually not unmanageable.

Alongside SAS programming, I worked with Lotus extensively. Most of the time, I took some data that a program had generated and put it into an easily readable format. Spreadsheets are very good for this sort of work. By doing this, my supervisor was able to easily see what she needed to see instead of having to sift through database printouts for one piece of information.
My most interesting and meaningful work involved a research project on the subject of prescription drug costs. A huge problem currently in the health insurance industry is the upwardly spiralling costs to companies of administering a drug benefit. The actuarial department had in its files a folder full of articles on this problem. Many of these discussed the problem and mentioned possible cost-saving alternatives. What I did was to read through this material (hundreds of pages of it) and condense some of the more meaningful material into readable form. I also ran various SAS programs to pull some of our numbers for analysis. The actuarial student with whom I had been working all summer really helped me with this phase as far as interpreting the numbers.

After numerous revisions and conversations with my supervisors, I used WordPerfect to produce the final copy. I then bound it in high quality grey cardboard, and in my opinion it really looked impressive. The reason for this careful packaging was that my project was circulated to the entire department, including the vice-president and senior vice-president. This was a great opportunity for me to leave something behind, proof of my quality work.

I received much positive feedback about the project, and that was truly satisfying. I even had the opportunity to talk with the vice-president for a time about the contents of my project.

For the reader's reference, I have included a copy of the prescription drug project at the end of this thesis.

All in all, my summer with The Associated Group was a positive experience. Once again, I sharpened as well as increased my computer skills. I also learned quite a bit about health insurance. It was much easier to learn concepts like stop-loss insurance and coinsurance by being in that environment for a summer than by simply memorizing them from a textbook.

My second summer helped me to develop a firmer grasp of the profession, although not nearly a complete understanding of an actuary's duties. Once again, I resigned myself to the fact that experience was the key to knowledge, and I entered my senior year wondering where I would be next summer.
V. Observations in Retrospect

In November of last year, I had the opportunity to give a presentation on my internship experiences as part of a departmental colloquium series. After speaking about my two summers, I was prompted to consider expanding the discussion into the form of a thesis. Furthermore, I realized that by condensing this information into readable form, I might be able to leave something behind that would be useful to those who come through the program in the future. Thus was born this discussion. The recollections and reflections contained in the preceding pages are both accurate and honest, and hopefully I've captured some of the essence of what it is to experience something new.

After four years in an actuarial program and two internships, my initial impressions and thoughts have certainly undergone a metamorphosis. When I began the program, I really was unaware of the commitment and discipline required for success in an actuarial career. Through classes and gaining familiarity with the exam system, I now have a much better picture of the trials and rewards that are so interwoven with this field.

However, as important as classes are, I feel that the most vital element of my education has come in the form of the two internships. It would be dishonest of me to say that, because I've been a summer student for six months, I know exactly what an actuary does and how I want to shape my career. Such knowledge is simply impossible to glean from such minimal exposure. What is important, though, is the fact that I was enveloped in an actuarial and professional environment for a time. The experience gained from that alone would be almost impossible to duplicate in the classroom.

As I've recounted, I learned much during my internships. The computer experience was invaluable. Many times I was given "grunt" work, but even in doing this I have developed a confidence that goes along with being able to do a good job and having others notice.
I now stand ready to begin my first permanent actuarial position upon graduation. Four years ago, this moment seemed an eternity away from me. Now that the time draws ever so close, I feel ready for the challenge. The combination of the Ball State actuarial program and my practical experience has cleared the forest a bit, so to speak. Hopefully, years down the road, I will open this document and it will serve as a reminder of some of the most important experiences not only of my educational career but of my life as well.
ANTHEM PRESCRIPTION
DRUG STUDY

August 4, 1992
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INTRODUCTION

This document provides highlights of our prescription drug study. We chose to look into this area due to the fact that prescription drug costs have been rapidly increasing in recent years. It is not uncommon for companies to be experiencing anywhere from 18 to 30 percent trends on their prescription drug business and for drug expenses to account for seven to 10 percent of total plan expenses, whereas in the 1970's they accounted for a mere four percent of total plan expenses (1,2,3). This estimate is expected to continue to grow throughout the nineties. New drug technology accounts for 15 percent of prescription drug cost increases, and a surprising 21 percent of cost increases stems from treatment-induced illness (1). Also, another issue that must be confronted is that the population as a whole is aging. This introduces a significant area where prescription drug costs are out of control: retiree benefits. Retirees use more (three times as much) prescription drugs than active employees. Their drugs also tend to cost more (average cost of $28.38 per script versus $24.63 for active employees (1)).

Prescription drug costs are no longer an insignificant slice of total health plan expenses. They need to be recognized, analyzed, and controlled. This document analyzes Anthem's experience, presents different methods of administering the drug benefit and controlling costs, and discusses drug utilization review, a relatively new tool in drug cost control.
ANTHEM EXPERIENCE

In order to get relatively "pure" data, we removed Acordia Senior Benefits, card business, Acordia Personal Benefits, and stand-alone drug business from our sample. We then narrowed our focus to just those members who have had the same benefits for the last three years or those who have started with Anthem at some point during the last three years and have had the same benefits to date. Thus, our tables and information in them should not be taken as representative of Anthem as a whole. We looked at prescription drug trends, costs per member per month, costs as a percentage of total plan costs, and average age by deductible and coinsurance for HSM and CMME.

Prescription Drug Trends

Table A (see appendix) highlights trends by deductible and coinsurance for both CMME and HSM plans. One caveat: we have seen a few oddities in Anthem's trends for which we presently have no solid explanation. The trends in table A come from a group of members who had to fulfill very stringent criteria (as described above) in order to be included in our analysis. Therefore, these numbers are definitely not carved in stone and should not be interpreted as representative of Anthem business as a whole or of any particular blocks of Anthem business. These numbers are for analysis, not comparison. Also, our trend numbers come from the 12 month midpoint trend generated on our lag reports. Some interesting observations:

--A lower trend is observed as the deductible increases.
--HSM trend seems to run about seven to 10 percent higher than CMME trend. One theory about this is that a few groups may be monopolizing HSM business. Another is that since under HSM the deductible applies only to the supplemental major medical portion, drug expenses will comprise a larger percentage of those expenses, causing a higher trend. Finally, HSM includes many retirees (note the higher as well as increasing average age in table D) whose drug expenses are traditionally high, thus causing a higher trend.
--HSM trend as a whole is approximately 30.70 percent. The March 1992 monthly trend package prepared by the actuarial department shows a 33.4 percent HSM trend.
--CMME trend as a whole is approximately 23.25 percent. The actuarial department's trend package shows a 13.1 percent trend. The disparity is being investigated.
--While it cannot be seen in exhibit A, Anthem has experienced a substantial decrease in trend since January 1992. This could simply be the result of bundling. It could also be due to anti-selection, wherein groups of people entered the plan recently that are better risks or groups have left the plan recently that were bad risks. Finally, it could be that there is a problem with our data since the beginning of 1992. This is currently under investigation.
--Milliman & Robertson's suggestion for prescription drug trend is 13 to 19 percent for a zero-dollar deductible.

**Prescription Drug Costs Per Member Per Month**

Table/graph B highlights Anthem's prescription drug cost per member per month as well as estimates from Milliman & Robertson and Tillinghast. Observations:

--HSM costs are significantly higher than CMME costs. This may be driven by first dollar coverage on the HSM side.
--On the CMME side, Anthem's costs are well in line with Milliman & Robertson's estimates, but fall below Tillinghast's.
--On the HSM side, Anthem's costs are above Tillinghast's estimates. Milliman & Robertson does not present data for HSM business.

**Prescription Drug Costs as a Percentage of Total Plan Costs**

Table C illustrates prescription drug costs as a percentage of total plan costs. Anthem seems to be in line with what current literature reports, with CMME drug costs accounting for 8.27 percent of total CMME costs and HSM drug costs accounting for 7.40 percent of total HSM costs. Current literature states that the national average is somewhere between seven and 10 percent of total health costs, and some sources estimate the percentage to be as high as 12 percent.

**Average Age by Deductible and Coinsurance for HSM and CMME**

Table D contains a summary of average ages for HSM and CMME by deductible and coinsurance at the beginning of the calendar year for the past three years. The most interesting aspect of this data is the relatively high average age for the HSM 100 dollar deductible and 80 percent coinsurance. This is probably due to the many retirees covered under HSM and could be a definite factor in driving up the cost per member per month for that deductible/coinsurance level. Aside from that, the other classes remain fairly consistent over time, with the 100/90 level's average being a little higher than the 250/80 and the 500/80 levels.

**Prescription Drugs by Market Division, Deductible, and Coinsurance**

Tables E and F break down the membership of our data by market division, deductible, and coinsurance for both HSM and CMME. Under each deductible/coinsurance level, the dominant markets are boxed in for easier reference.
Methods of Drug Benefit Administration and Cost Control

I. Major medical plan
   A. Currently, Anthem administers most of its business in this fashion.
   B. Advantages
      1. "Shoebox effect"--wherein people set aside pharmacy receipts with the
         intention of filing a claim, but never actually do so. As much as 15 to 20
         percent of receipts may never be submitted (4). However, the shoebox
         seems to be shrinking. As the cost of prescriptions increases, people are
         much more likely to file the claim rather than place it in "the shoebox"
         and forget about it.
      2. There is a deductible, coinsurance, and a maximum benefit.
      3. "Hesitation effect"--many people hesitate to fill prescriptions due to their
         own out of pocket expense (even though they will be reimbursed, the
         "up-frontness" of it causes hesitation).
   C. Disadvantages
      1. The plan pays based on full retail, which is often up to 20 percent greater
         than wholesale (5).
      2. Monitoring of drug utilization is extremely difficult and virtually non-existent.
         This is the major medical method's greatest drawback.
      3. It is difficult to encourage use of generics.
      4. Cutting costs by simply increasing the deductible and coinsurance may serve
         to put more people in the hospital because they will not pay for their medicine
         if the cost to them becomes too excessive.

II. Prescription card plan (traditional)
   A. Advantages
      1. Users like it better (if employee satisfaction is a high priority).
      2. Discounts can be negotiated (typically, the discounted price is some
         percentage of the average wholesale price plus a dispensing fee).
      3. Some programs would provide utilization data for analysis.
   B. Disadvantages
      1. Due to the dispensing fee, the card plan price ends up very similar to the retail
         price.
      2. Since the pharmacy files the claim, all claims are reported; this causes loss of
         the "shoebox effect."
      3. The amount of discount many times does not make up for increased utilization
         (it is easy to present a card and get a prescription as opposed to having to foot
         the bill initially).
      4. The card administrator would not be aware of pre-existing exclusions or
         waivers. However, in the wake of new technology, administrators are
         beginning to handle these restrictions.
   C. The traditional card plan probably will not generate savings. However, a card can
      be a very important facet of an integrated plan that combines a card with other
      innovative designs.
III. Mail order plan

A. Advantages
1. Provide 60-90 day supply.
2. Possesses potential for maximum generic substitution.
3. Can obtain low unit costs on drugs in return for large quantity purchases.
   a. Range of five to 15 percent discount for brand name drugs (5).
   b. Range of 20 to 40 percent discount for generic drugs (5).
4. A properly designed copay encourages use of generics.

B. Disadvantages
1. Lack of a deductible.
2. The "shoebox effect" is lost.
3. Has not yet lived up to its potential for generic substitution, but this could be remedied through use of a formulary, which is a list of covered or non-covered drugs.
4. Wastage--a large supply is dispensed, patient find the drug ineffective, and either does not use or throws away the remaining supply. This could be curtailed by requiring a first time prescription to be obtained from a pharmacy for only a 28 day supply. Then, if it is ineffective, there is less wastage.
5. Mail order firms can buy huge quantities of drugs very inexpensively but at the same time charge customers a cost per unit that is taken from the smallest, most expensive package available.

C. This plan is most applicable to administering maintenance drugs and controlling retirees' drug costs.

IV. Point of sale (POS) systems

A. Cash-carry-reimburse (CCR)
1. Retains features of the major medical system.
2. This system uses a drug card. The receiving pharmacist must dial into the claims administrator's computer to check eligibility, exclusion of certain drugs, and to obtain an authorization number for that specific transaction.
3. The patient pays the full amount up front and is given the authorization number. This number will be included on the claims form in order for the patient to be reimbursed.
4. Advantages
   a. Retains "shoebox effect"--some claims will not be submitted.
   b. Retains the delay in paying drug claims.
   c. Retains hesitation factor.
   d. Effective cost management aids, such as screening for harmful interactions, excluded drugs, and prescribing patterns, are able to be utilized.
   e. Employees are satisfied due to ease of use and more expedient claims payment.
5. CCR systems haven't been widely tested, so there is no guarantee that such a system saves money.

B. POS without CCR
1. Requires only a copay or coinsurance amount as opposed to the full amount.
2. Claims are submitted electronically; pharmacist is reimbursed immediately by a claims processor.
   a. This eliminates the "shoebox effect."
   b. Advantage: employees are more satisfied due to ease of use.
3. With POS technology, deductibles, coinsurance, interactions, etc., can be monitored.

V. Managed pharmacy networks
   A. Involve truly selective networks of pharmacies (25-50 percent of available stores (6)).
   B. Usually include one or more chain pharmacies as well as independent pharmacies in order to provide good geographic access.
   C. Substantial discounts below retail can be achieved (i.e. average wholesale price minus 15 percent plus a dispensing fee).
   D. Take advantage of point of sale technology by monitoring items such as deductibles, split copays, interactions, etc.
   E. Must be compared to existing plan in regards to:
      1. Size of the network.
      2. Design options.
      3. Amount of discounts.
      4. Would drug utilization review be a major component?
      5. Can formularies be used?
   F. Anthem currently is involved with three networks (AHS):
      3. Investigating possibilities of some sort of coast-to-coast network.

VI. Consortium of insurers
   Situation wherein several similar-sized insurance companies would join together in an effort to bargain with drugstore chains for discounts in exchange for a huge customer base. Would savings potential make up for start-up costs and the very complex and time-consuming organizational process?

VII. In-house pharmacies
   A. Advantages
      1. Pharmacy can contract for discounts, both pricing and administrative.
      2. Drug utilization is easy to monitor.
      3. More control over generic substitution.
   B. Disadvantages
      1. Large set-up and operating costs.
      2. Accessibility for dependents and retirees could be a problem.
      3. While not a perfect benchmark to go against, it has been suggested that at least 4000 on-site employees are needed to make such a program cost-effective (7).
VIII. Lobby drug manufacturers
   It may be possible to lobby to restrict to a more reasonable level the return
   on investment of each product manufactured by drug companies.

IX. Drug utilization review
   **Refer to next page**
Drug Utilization Review (DUR)

Definition
Drug Utilization Review (DUR) is a relatively new tool in the effort to contain the cost of prescription drugs. There are many different aspects of DUR, beginning with what is called "basic" utilization review. Basic UR is the practice of exercising some control over drug utilization at the point of sale. The way it works goes something like this: The patient presents a card to the pharmacist. The pharmacist then accesses information via personal computer. This information is then used to verify eligibility, check deductible and copay levels, check the formulary (if one is used), screen for possible harmful interactions, screen for cautions if the patient is pregnant, specify if a generic substitution is mandated by the patient's insurance company, as well as look at numerous other guidelines. As mentioned, this process does require the use of a card. But with point of sale technology, savings are possible through the aforementioned safeguards as well as through the electronic processing of claims.

Physician Education
Basic utilization review has shown promise in many cases, but it has not been perfected. Recently, a more extensive method of DUR was born characterized by a second wave of attack that goes beyond review at the point of sale. It has often been suggested that the real root of the problem is the prescribing habits of physicians. So another level has been added to several DUR programs. This level looks directly at physicians' prescribing habits and attempts to get them to prescribe in a more cost-efficient manner. Once a problem is identified, letters are sent to the physicians that describe more cost-effective therapy. Doctors are surprisingly receptive to this approach as long as it is done with some tact. Formularies could also be sent to the physicians with the understanding that their use of it would be completely voluntary. Even something like a newsletter with the purpose of physician education and suggesting more use of generics could be effective.

Keeping Indemnity
Drug Utilization Review seems like it will play an integral role in the future of prescription drug cost control. Many DUR programs utilize a card, but such a program is not the traditional card program of a few years ago in which the only result was increasing utilization of the benefit. With point of sale technology, claims can be processed electronically, and deductibles and copays can be included, along with the many other benefits of DUR. The card can simply be used as a form of identification and an integrated plan can still be used. This design that utilizes a card while retaining features of an indemnity plan is the POS-CCR design. Through this, price discounts can be negotiated in exchange for a large base of customers while at the same time retaining the indemnity approach. John Hancock is currently testing this system on a limited basis and expects it to cut its total health tab five to eight percent (3).

Advantage: Consistent Data
The major advantage of drug utilization review above and beyond the previously mentioned cost-cutting controls is that solid, consistent data would be available for analysis. This would especially benefit Anthem, in my opinion, since our data are often skewed by bundling and other factors.
References Cited


Appendix
Table A:

Prescription Drug Cost Trends
(12 month averaged)

<table>
<thead>
<tr>
<th>Deductible/Coinsurance</th>
<th>CMME Trend</th>
<th>HSM Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>100/80</td>
<td>26.86%</td>
<td>32.05%</td>
</tr>
<tr>
<td>250/80</td>
<td>21.23</td>
<td>4.90**</td>
</tr>
<tr>
<td>500/80</td>
<td>1.95</td>
<td>17.06</td>
</tr>
<tr>
<td>100/90</td>
<td>9.00**</td>
<td>31.09</td>
</tr>
</tbody>
</table>

**Indicates a very small sample size which may cause statistical aberrations.**
Table B: 
*Prescription Drug Costs (Per Member/Month)*

<table>
<thead>
<tr>
<th>Deductible/Coinsurance</th>
<th>Anthem CMME</th>
<th>Milliman &amp; Robertson</th>
<th>% of Anthem</th>
<th>Tillinghast</th>
<th>% of Anthem</th>
</tr>
</thead>
<tbody>
<tr>
<td>$100/80</td>
<td>$6.90</td>
<td>$6.08</td>
<td>88.1%</td>
<td>$7.21</td>
<td>104.5%</td>
</tr>
<tr>
<td>250/80</td>
<td>4.36</td>
<td>4.52</td>
<td>103.7</td>
<td>6.06</td>
<td>139.0</td>
</tr>
<tr>
<td>500/80</td>
<td>3.36</td>
<td>3.17</td>
<td>94.3</td>
<td>5.28</td>
<td>157.1</td>
</tr>
<tr>
<td>100/90</td>
<td>9.38</td>
<td>6.69</td>
<td>71.3</td>
<td>8.50</td>
<td>90.6</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Deductible/Coinsurance</th>
<th>Anthem HSM</th>
<th>Tillinghast</th>
<th>% of Anthem</th>
</tr>
</thead>
<tbody>
<tr>
<td>$100/80</td>
<td>$11.98</td>
<td>$9.08</td>
<td>75.8%</td>
</tr>
<tr>
<td>250/80</td>
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</tr>
<tr>
<td>100/90</td>
<td>9.80</td>
<td>10.21</td>
<td>104.2</td>
</tr>
</tbody>
</table>

Sources:
*Milliman & Robertson’s Health Cost Guidelines, July 1, 1992*
*Tillinghast’s Group Medical Insurance Rate Manual, December 1991*
*Anthem experience statistics, June 1992*
CMME Prescription Drug Costs

Claims Costs PMPM

Deductible/Coinsurance

- $100/80
- $250/80
- $500/80

Anthem
Milliman & Robertson
Tillinghast
Table C:

Anthem Drug Costs as a Percentage of Total Health Costs

<table>
<thead>
<tr>
<th>Deductible/ Coinsurance</th>
<th>Percent of total costs:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CMME</td>
</tr>
<tr>
<td>100/80</td>
<td>10.33%</td>
</tr>
<tr>
<td>250/80</td>
<td>5.44</td>
</tr>
<tr>
<td>500/80</td>
<td>6.95</td>
</tr>
<tr>
<td>100/90</td>
<td>8.80</td>
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</table>

CMME as a whole: 8.27%
HSM as a whole: 7.40%
Table D:

Prescription Drug Member Age Summary

<table>
<thead>
<tr>
<th>Deductible/Coinsurance</th>
<th>As of January 1990</th>
<th>As of January 1991</th>
<th>As of January 1992</th>
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<tr>
<td></td>
<td>HSM</td>
<td>CMME</td>
<td>HSM</td>
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<td>100/80</td>
<td>42.5</td>
<td>31.9</td>
<td>43.6</td>
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<td>250/80</td>
<td>32.7</td>
<td>31.0</td>
<td>31.8</td>
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<tr>
<td>500/80</td>
<td>28.5</td>
<td>33.3</td>
<td>27.9</td>
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<tr>
<td>100/90</td>
<td>35.2</td>
<td>35.1</td>
<td>33.8</td>
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### Table E:

**HSM Prescription Drug Membership Summary**  
(By market division, deductible, and coinsurance)

<table>
<thead>
<tr>
<th>Market Division</th>
<th>Market Division Name</th>
<th>100/80</th>
<th>250/80</th>
<th>500/80</th>
<th>100/90</th>
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<td>127</td>
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<td>Acordia Local Govt.</td>
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<td>35</td>
<td>PAL</td>
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<td>40</td>
<td>Acordia Collegiate</td>
<td>12,856</td>
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<td>45</td>
<td>Acordia Financial</td>
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<td>0</td>
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<td>50</td>
<td>Acordia Health</td>
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<td>0</td>
</tr>
<tr>
<td>55</td>
<td>Acordia Small Business</td>
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<tr>
<td>65</td>
<td>Acordia Corporate</td>
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<td>67</td>
<td>Construction</td>
<td>0</td>
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</table>

Total: 88,750 100.00% 1,224 100.00% 1 100.00% 51,511 100.00%
<table>
<thead>
<tr>
<th>Market Division</th>
<th>Market Division Name</th>
<th>Member count</th>
<th>Percent of Total</th>
<th>Member count</th>
<th>Percent of Total</th>
<th>Member count</th>
<th>Percent of Total</th>
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<th>Percent of Total</th>
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<tbody>
<tr>
<td>04</td>
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<td>77</td>
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<td>1.74%</td>
<td>77</td>
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<tr>
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<td>Natl. Non-Syndicated</td>
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<td>3.32%</td>
<td>2,903</td>
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<td>5,761</td>
<td>29.65%</td>
<td>115</td>
<td>6.50%</td>
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<td>22</td>
<td>Acordia Schools</td>
<td>30,893</td>
<td>41.75%</td>
<td>5,786</td>
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<td>150</td>
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<tr>
<td>35</td>
<td>PAH</td>
<td>637</td>
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<td>0.00%</td>
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<tr>
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<td>5.96%</td>
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<td>12.01%</td>
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<tr>
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<td>13.88%</td>
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<td>3.98%</td>
<td>1,103</td>
<td>5.70%</td>
<td>0</td>
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</tr>
</tbody>
</table>

73,784 100.00%  40,265 100.00%  19,433 100.00%  1,768 100.00%

Table F:
CMME Prescription Drug Membership Summary
(By market division, deductible, and coinsurance)