



"For Professional Recognition of the Health Actuary"

The Formulary Decision Process: What Are They Doing in There and Can Actuaries Help?

by Jill Van Den Bos, M.A., John Watkins, R.Ph., MPH, Kristin Reed, MPH, and Jonathan Shreve, FSA

Any prescription drugs are cost-effective treatment options.ⁱ With so many prescription drugs available, which ones should be covered and encouraged by health plans and which should not? It is the Food and Drug Administration's (FDA) job to ensure that only safe and effective pharmaceuticals are available in the United States. Given that this agency does its job well, why give the issue any further thought?

In the past, this line of thinking may have been acceptable. Health plans could allow their members access to whatever drugs were prescribed by their physicians. The difficulty has come with the explosion in cost in this area of health care. While total health care expenditure trends have ranged from 9 percent to 16 percent over the past five years, pharmaceutical benefit trends have increased at rates of 17 percent to 18 percent.ⁱⁱ These pharmaceutical cost trends have been attributed to increases in drug utilization (39 percent), increases in drug prices (37 percent), and shifts to higher priced drugs (24 percent).ⁱⁱⁱ

The more recent innovations in biotechnology have helped to fuel this trend and seem poised to continue to do so. The term "biotechnology drug" refers to a pharmaceutical treatment with three characteristics. First, the drug is derived from particularly sophisticated technology. Second, these drugs require more complicated administration. They are injectable drugs, some requiring physician administration. Third, because of the expensive development costs and the additional administration costs, these drugs are very expensive, typically more than \$1000 per month per patient. For example, Xolair is a biotechnology drug for the treatment of asthma that costs about \$1000 per month. Another



example is Fabrazyme for Fabry's Disease. While this condition is rare, the cost of the drug is about \$250,000 per patient per year.

There are over 100 biotechnology drugs currently available, and the drug pipeline promises many more after 2006. These drugs currently account for roughly 10 percent of the pharmacy budget.

Pharmacy Benefit Management and the Use of Data

To manage this expense, health plans in recent years have had to consider carefully which

(continued on page 20)

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CONTENTS

COVER

The Formulary Decision Process: What Are They Doing in There and Can Actuaries Help?

Jill Van Den Bos, John Watkins, Kristin Reed and Jonathan Shreve

OPINION

3 Chairperson's Corner

Karl G. Volkmar

3 Book Review William R. Lane

1

FEATURES

- 4 What Will Be the Impact of the New Medicare Prescription Drug Benefit? Corey N. Berger
- 8 Impact of the Medicare Prescription Drug, Improvement and Modernization Act on Medicare Supplement Insurance Plans Dennis Hare
- 10 The Art and Science of Pricing Small Group Medical Coverage William R. Lane
- 14 The Bottom Line on Behavioral Health Care Costs

Steve Melek

16 The Cost of Mental Health Parity Steve Melek

ANNOUNCEMENTS

- 13 The SOA Announces Co-Sponsorship of the 2005 GUAA Annual Meeting
- 26 IAA Health Section Update
- 27 New Opportunities for Health Section Participation
- 28 Overview of Sessions at the 2005 Health / Pension Spring Meeting
- 28 Availability of the Disability Chart Book

Chairperson's Corner

by Karl G. Volkmar

The "section-year" runs from late October to late October, beginning and ending during the annual meeting each fall. This is when the Health Section Council (HSC) turns overthree of the nine HSC members officially rotate off the HSC (but, thankfully, they usually still help out!) and three newly elected members join the crew. Please note, however, that this year is different than prior years-everyone is effectively new to the HSC this year. This is not due to a strike or a mass exodus-six of the HSC are, in fact, returning-but due to significant changes being implemented in conjunction with this "changing of the guard." As you may know, the elected HSC has served section members for nearly 25 years. They have served their members primarily by:

- Providing continuing education opportunities primarily through the Spring and Annual SOA meetings;
- Providing communication and networking opportunities (e.g., Health Section News, meeting events, etc.); and,

• Soliciting, oversight and sponsorship of practical short-term research.

The Health Benefit Systems Practice Advancement Committee (HBSPAC) is an appointed committee of the SOA that has served all practicing health actuaries by (for example):

- Providing thought leadership to the SOA.
- Developing and maintaining external relationships with other professions, associations, etc.
- Soliciting, oversight and sponsorship of longerterm research.

As a result of the SOA's governance audit we've been hearing about for some time, the decision was made to merge these two groups into one. The surviving group is called the Health Section Council, but it really could be renamed. It will only be through the effective integration of the energy,

(continued on page 19)



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Book Review

Disease Management Program Evaluation Guide

by William R. Lane

ctuaries who work with medical insurance, either as plan actuaries who must price the cost of coverage, or as employee benefits actuaries who must advise employers as to how well disease management programs are working, will find the "Disease Management Program Evaluation Guide" a good working reference.

The Disease Management Association of America (DMAA) has compiled a lot of basic information on the evaluation of disease management programs into one relatively short book (less than 80 pages).

The book talks about the issues facing anyone who is attempting to evaluate disease management (DM) programs for cost effectiveness. It discusses the most accurate ways to make such evaluations and why these approaches tend to be very difficult to implement in the real world. Page 33 has a chart covering a dozen ways to study cost effectiveness and gives some comparative thoughts on each, such as relative accuracy, relative ability to implement in the real world, relative time frame to implement and whether a control group is needed in order to use this approach. The book touches briefly on a number of important considerations such as timing, trend, appropriate measures, how to establish a "population," causation, regression to the mean and the general validity of the results. It also provides a checklist for evaluating your own DM evaluation process. Since it is a short book, it cannot cover these topics in depth and often simply highlights the problem without lengthy discussion as to how to solve the problem.

One aspect of the book that I found difficult was the heavy use of "insider" language. "Pre-post" designs may be familiar to DM specialists, but I had some difficulty getting up to speed with the lingo. To alleviate this problem, readers should consider also acquiring the companion volume, "Dictionary of Disease Management Terminology."

I found the book well worth reading and would strongly recommend it to anyone who needs to study the cost benefit of medical interventions.



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What Will Be the Impact of the New Medicare Prescription Drug Benefit?

by Corey N. Berger, FSA, Senior Consultant, Reden & Anders, Ltd.

Introduction

n Dec. 8, 2003, President Bush signed into law the "Medicare Prescription Drug, Improvement and Modernization Act of 2003." Two of the primary goals of this legislation were to offer a prescription drug discount card to Medicare recipients starting in 2004 and, more importantly, an insured prescription drug benefit to Medicare recipients starting in 2006. These new benefits, along with the restrictions imposed on the ability of Medigap policies to offer prescription drug coverage to new enrollees starting in 2006, will have a significant impact on prescription drug coverage for the Medicare population and could have an impact on coverage for the commercial population. The total annual cost to the federal government of this new prescription drug coverage was originally estimated at \$400 billion, but those estimates have increased since the legislation was passed. For purposes of this article, our estimates are based on this \$400 billion estimate. If the actual costs are higher, the distribution among recipients would likely be the same while the dollar amounts would increase.

The impact of this legislation on the entire pharmaceutical distribution chain, including pharmaceutical manufacturers, pharmacy benefit managers (PBMs), pharmacies, insurers, employers and insureds, is still unclear. For all of these entities, a number of questions will need to be answered in order to determine the impact:

- Who in the distribution chain will see the \$400 billion estimated cost, and how much will each entity see? How much of the \$400 billion is to cover additional utilization created by the drug card in 2004 and the insured benefit in 2006 versus just shifting costs to the federal government (i.e., does the pie grow or just get reallocated)?
- How will the Medicare prescription drug plan affect the commercial market? Will pharmacies reduce the discounts they offer to PBMs, insurers and employers in order to compensate for the loss of cash-paying customers, and will pharma-

ceutical manufacturers reduce their average rebates per prescription?

• What will potential prescription drug plans (PDPs) offer as benefits? Among those Medicare Advantage plans offering prescription drug plans (MA-PDs), what benefits will be offered? And will any offer supplemental benefits?

Who will see the \$400 billion estimated cost?

Many published news stories indicate that the HMO/insurance industry and the pharmaceutical manufacturers are the big winners from the Medicare prescription drug benefit. Many of these news stories are based on quotes from detractors of the bills. In reality, neither of these industries may come out as huge winners from this legislation.

In fact, public sector and private sector *employers* who currently provide prescription drug benefits to their Medicare recipients appear to have the clearest-cut benefit. These employers will either receive a direct tax-free subsidy from the federal government for 28 percent of the gross cost of prescription drugs between \$250 and \$5,000 starting in 2006, or they could eliminate their prescription drug benefit and migrate their Medicare recipients into a Medicare prescription drug (Part D) plan. Original published estimates from several sources including the government's own estimates of the cost of this subsidy range from \$71 to \$86 billion out of the \$400 billion, or about 20 percent of the total cost of the bill.

The impact on *HMOs/insurers* or any other entity that wants to be a PDP is less obvious. Clearly they will receive some of the \$400 billion for providing administrative services for the prescription drug benefit. A rough estimate of the value of the administrative services is about \$50 billion. Unlike the subsidies to the employers, however, this money will not go straight to the bottom line of PDPs. While some of this money could result in bottomline profits, we would expect that a large percent of this revenue would cover real additional expenses. Who will see the rest of the money? Pharmaceutical manufacturers will likely see some, although the increase in prescriptions filled (utilization) may be minimal. Studies have indicated that approximately 75 percent of Medicare beneficiaries currently have some level of coverage, either from employers, Medicare+Choice HMOs, Medigap plans, existing prescription drug plans, Medicaid or programs offered by the manufacturers. The level of coverage for these individuals is not clear and varies significantly depending on the coverage, but those with employer coverage, Medicaid, or some of the richer Medigap plans are likely to already utilize prescription drugs at the same level (or potentially an even higher level) than they would under the Medicare prescription drug plan, so they would be unlikely to increase their utilization. (In fact, if some of these people lose their current prescription drug coverage and move into the standard prescription drug plan, their utilization may actually decrease.)

In addition, analysis of Reden & Anders' internal prescription drug databases indicates that only about 10 percent of Medicare beneficiaries would have costs in excess of \$5,100 and only 33 percent would have costs in excess of \$2,250 in 2006. These are the two breakpoints in the formula for Medicare prescription benefits. Assuming a 10 percent increase in utilization from the introduction of the new coverage would mean additional revenue to the pharmaceutical manufacturers of about \$50 billion in total from 2006 to 2013. Considering the industry had over \$150 billion in revenues from the United States in 2004, a \$50 billion increase in total from 2006 to 2013 would increase revenue by only 2-4 percent over that time period.

The remaining cost of the \$400 billion, or about \$200 billion (the largest part), would likely go to reimburse directly *Medicare beneficiaries* who currently pay for their drugs themselves by reducing the out-of-pocket costs for those beneficiaries.

How will the Medicare prescription drug plan affect the commercial market?

As mentioned previously, statistics show that about 75 percent of Medicare beneficiaries currently have some level of prescription drug coverage. For a majority of Medicare beneficiaries, however, the discounts available through that coverage are less



than the discounts currently available for commercial insureds. For example, for brand prescriptions most employers receive a discount of between 12 percent and 15 percent, before factoring in rebates, based on a survey performed by Reden & Anders. Most Medicare recipients not covered under an employer plan or a Medicare+Choice plan likely receive a discount of less than 10 percent on brand prescriptions, and those without any coverage most likely receive a discount of 5 percent or less, based on Reden & Anders' knowledge of those markets. If all Medicare recipients moved to a discount of 12 percent from their current estimated discounts, the reduction in revenue to the pharmacies could be as much as \$2 billion. The net income of Walgreen's, CVS and Rite Aid combined for the trailing 12 months (as of 12/10/2003) was \$1.8 billion based on filed financial statements. However, most Medicare members without insurance do not have the opportunity to receive prescription drugs from other sources, such as mail order. If these members were offered this option and chose to get mail order prescriptions, this would impact the revenue generated from other items sold by the retail prescription drug stores. The retail pharmacies will need to take this combination of factors into consideration when negotiating their contracts with the Part D carriers for Medicare insureds, which may impact their commercial contracts or result in entirely separate contracts for Medicare beneficiaries even though that would add additional administrative complexity.



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(continued on page 6)

The same issue obviously applies to the pharmaceutical manufacturers. They currently provide rebates to the PBMs or employers based on market share and volume. These rebates are only paid, however, to entities that have a contract with the manufacturer. For Medicare beneficiaries that have limited or no insurance for their prescription drug coverage, the manufacturers do not pay a rebate. Once these beneficiaries start to enroll in an insured plan, however, the PBMs or insurers are likely to include these new prescriptions in the total volume they report to the manufacturers and request a rebate for these prescriptions.

The United States market for prescription drugs consisted of approximately 3.2 billion prescriptions in 2003 according to the NACDS Web site (accessed on 7/23/2004). Assuming that one third of that total is for Medicare, about 1.1 billion prescriptions are filled for Medicare recipients. If 40 percent of those prescriptions are filled by people that do not have any plan that would receive rebates, and 40 percent of those individuals' prescriptions would be eligible for an average rebate of \$2, about 18 million prescriptions would receive rebates currently not paid. The additional rebates the manufacturers would have to pay would be \$360 million in current dollars, (which may be applicable under the prescription drug card) and likely even more in 2006. As with the pharmacies, the manufacturers may face the same issue regarding the level of rebates they pay for Medicare beneficiaries compared to their current payments for commercial members, especially if the inclusion of Medicare members under insured coverage does not increase utilization.

The United States market for prescription drugs consisted of approximately 3.2 billion prescriptions in 2003

If the pharmacies and manufacturers refuse to extend their existing levels of discounts and rebates to new Medicare beneficiaries, the result will be either a two-tier level of discounts and rebates (one for commercial and one for Medicare) or new levels for discounts and rebates. Since most PBMs typically have a global contract with each pharmacy chain that covers all prescriptions filled by that chain for all members covered by the PBM, developing a split reimbursement schedule may be difficult, or, at a minimum, undesirable. Alternatively, developing new contracts with lower discounts and rebates that would maintain the current profit levels for the pharmacies and total payout for the manufacturers would result in lower discounts and rebates than what the commercial market currently receives. The result could be a spike in prescription drug costs for all entities currently providing prescription drug coverage that receive the higher discount over and above the trends we already see for pharmacy.

What will PDPs offer for benefits, and will any offer supplemental benefits?

The legislation defines a standard prescription drug benefit starting in 2006 as the following:

- From \$0 to \$250 in total costs (not including administration), the member pays 100 percent.
- From \$250.01 to \$2,250 in total costs (not including administration), the plan pays 75 percent of the cost and the member pays 25 percent.
- From \$2,250.01 to \$5,100 in total costs (not including administration), the member pays 100 percent.
- Above \$5,100 in total costs (not including administration), the member pays the greater of 5 percent or \$2 for generic or multi-source prescriptions and \$5 for all other prescriptions and the plan pays the balance. The \$5,100 in total costs is equal to an out-of-pocket expenditure for the member of \$3,600.

The PDP must submit a bid for covering the cost of the standard prescription drug coverage (or an actuarially equivalent plan) that includes the cost of administration. This bid is called the "direct subsidy" and covers the 75 percent of costs between \$250 and \$2,250 and approximately 15 percent of the costs after the member's out-ofpocket expenses are greater than \$3,600. The remaining 80 percent of costs above the out-ofpocket maximum are reimbursed directly by the government as part of a "reinsurance subsidy."

The legislation then requires that an "adjusted national average monthly bid amount" be calculated using all of the accepted bids. The "national average monthly premium" is then calculated as approximately 25.5 percent of the total of this "adjusted national average monthly bid amount" plus an average of the expected reinsurance subsidy that all bidders must also include as part of their overall bid. Finally, the premium an individual member must pay will be the "national average monthly premium" plus or minus the difference between the PDP bid and the "adjusted national average monthly bid amount" (i.e. if the PDP bid is \$10 above the "adjusted national average monthly bid amount," the entire additional \$10 would be charged to the member.)

Since the "adjusted national average monthly bid amount" is not known when the bids are submitted, especially in 2006, there is clearly some risk in submitting a bid. One likely result from this mandatory adjustment in member premium in order to reflect the difference between the bid and the "adjusted national average monthly bid amount" is that in the first couple of years in which the Medicare prescription drug plans are offered, bids will likely be made conservatively, unless a PDP was looking to enroll a vast majority of the beneficiaries in their region or service area.

In addition to the *basic* prescription drug benefit, PDPs can offer supplemental coverage. Supplemental coverage is an enhancement to the basic prescription drug benefit, and has some additional aspects:

- The entire cost of the supplemental coverage must be paid for by the Medicare beneficiary.
- The supplemental coverage can take the form of a reduction in the deductible or coinsurance or an increase in the initial coverage threshold. There is no mention of a change in the annual out-of-pocket threshold and whether this can be reduced.
- The individual reinsurance provision that reimburses the PDP for 80 percent of their costs once a member hits the out-of-pocket maximum would be worth LESS since it would require more total claims for an individual to hit the outof-pocket maximum of \$3,600 if the member is paying less per prescription, on average, than they would under the basic benefit.

- The aggregate reinsurance provisions that apply when costs are in excess of 102.5 percent of expected costs do not apply to the portion of coverage that is for supplemental benefits.
- The cost for supplemental coverage can reflect an assumption for additional utilization due to selection.

These elements of the supplemental coverage may discourage plans from offering supplemental prescription drug coverage, even with the ability to adjust the bid to reflect additional utilization. Since members will have to pay the full cost of the additional benefit, and since prescription drug costs are among the most predictable of all medical costs, the individuals that will pay for the additional benefits are extremely likely to use it, and highly likely to use more services than the excess premium would cover. The lack of any additional reinsurance protection for this adverse selection means that if plans do offer supplemental coverage, they will likely price it very conservatively since they are at risk for all of the supplemental costs with minimal reinsurance from the federal government.

Conclusions

Clearly, this new Medicare prescription drug benefit will impact the pharmaceutical industry, many HMOs and insurers, employers sponsoring retiree prescription benefits and Medicare beneficiaries themselves. What remains to be seen is who the ultimate winners and losers will be, but identifying some likely repercussions and planning for them now can provide you with a competitive advantage under the new paradigm. 2006 will be here soon. So those who manage retiree prescription programs should start the review and planning soon. **4**

Impact of the Medicare Prescription Drug, Improvement and Modernization Act on Medicare Supplement Insurance Plans

by Dennis Hare

resident Bush signed the Medicare Prescription Drug, Improvement and Modernization Act (MMA) on Dec. 8, 2003. Among the many requirements of MMA was the addition of prescription drug benefits in the new Medicare Part D. Provision of drug benefits via Medicare required the NAIC to make several changes to the Model Regulation to Implement the NAIC Medicare Supplement Insurance Minimum Standards Model Act, i.e. Model Regulation, in order to conform to the federal law. These changes had a direct impact on certain Medicare supplement, or Medigap, products. On Sept. 8, 2004 the NAIC adopted amendments to the Medicare Supplement Model Regulation in response to the requirements of MMA.

The amendments to the Medicare Supplement Model Regulation that implement the following four requirements of MMA are described below in more detail:

- 1. Add two new plans (called K and L) to the standard Medigap plans A through J;
- 2. Prohibit the sale of outpatient prescription drug coverage in Medigap plans after Dec. 31, 2005 (i.e., when Part D comes into effect);
- 3. Revise Medigap plans to eliminate outpatient prescription drug coverage for those who enroll in Medicare Part D;
- 4. Make any other changes to the model regulation that might be required as a result of the legislation.

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New Plans K and L

Medigap plans K and L have been added to the Model Regulation in response to the MMA requirement that two new standardized Medigap benefit packages be developed. These federally prescribed benefit packages generally increase the cost sharing by the insured over that of plans A through J.

Coverage under Plan K includes 50 percent of the cost sharing otherwise applicable under Medicare Parts A and B, except there is no coverage for the Part B deductible and any cost sharing otherwise applicable for preventive benefits is covered at 100 percent. All hospital inpatient coinsurance and 365

extra lifetime days of coverage of inpatient hospital services are covered as in the current core benefit package. After the individual has reached the annual out-of-pocket limit, all cost sharing under Medicare Parts A and B is covered at 100 percent for the balance of the calendar year. The annual out-of-pocket limit is \$4,000 for 2006, and is indexed for inflation in future years.

Benefits under Plan L are identical to Plan K except that 75 percent, rather than 50 percent, of cost sharing for Parts A and B is covered until the annual out-of-pocket limit is reached, and the initial out-of-pocket maximum in 2006 is \$2,000 rather than \$4,000.

The outlines of coverage illustrated in the Model Regulation have been revised to reflect these two new plans.

Ban on Future Sale of Outpatient Prescription Drug Coverage

After Dec. 31, 2005, companies are no longer allowed to issue Medigap plans that provide outpatient prescription drug coverage. Beginning Jan. 1, 2006, companies will only be allowed to issue plans H, I and J or related plans in waiver states if they have been modified to eliminate prescription drug benefits and the premiums have been adjusted accordingly.

Plan Revisions for Policies With Drug Coverage

On Jan. 1, 2006 the rules for renewal of Medigap policies providing outpatient prescription drug coverage change. Renewal options for standardized and pre-standardized plans with drug benefits that were sold prior to Jan. 1, 2006 depend upon whether the insured has elected to enroll in Medicare Part D.

If the insured does not enroll in Part D, the policy can be renewed at the option of the insured without any modification. However, there are two options available to insureds if they elect to enroll in Part D during the initial enrollment period that ends May 15, 2006. The insured may choose to continue their current policy, but the insurer must eliminate the drug benefits and appropriately adjust the premium, or the insured may cancel their current policy and purchase under a guaranteed issue provision a new standardized plan A, B, C, F, K or L offered for sale by their current insurer. This guaranteed issue offer begins on the date the individual receives notice from the carrier during the 60-day period immediately preceding the initial Part D enrollment period and ends 63 days after the effective date of the insured's coverage under Part D. If the insured elects to enroll in Part D after the initial enrollment period, they may continue their current policy without drug benefits, but they do not have the guaranteed issue option to switch to another plan offered by the insurer.

To assist insurers with the premium modification for these plans, the NAIC Accident and Health Working Group of the Life and Health Actuarial Task Force is currently working on a set of principles to guide carriers when Medigap plans are modified to remove drug benefits. Proposed language for these principles is expected to be finished in the first quarter of 2005, and amendments to the Model Regulation or the NAIC Medicare Supplement Insurance Model Regulation Compliance Manual will follow.

The Working Group previously considered whether changes to the premium refund provision of the Model Regulation are necessitated by MMA. A single change was made to the benchmark loss ratio formula used in the premium refund calculation. The relatively minor change expands the formula to include use of earned premiums for the lifetime of the policy rather than stopping after the first 15 years as required in the previous formula. During discussions of other possible changes the Working Group agreed that for purposes of the premium refund calculation, plans where drug coverage has been eliminated should be combined with like plans that continue to provide outpatient prescription drug coverage.

Another amendment requires an issuer to file any riders or amendments to the policy or certificate forms used to delete outpatient prescription drug benefits only with the commissioner in the state in which the policy or certificate was issued.

The discontinuance of outpatient prescription drug benefits is reflected in the revised outlines of coverage illustrated in the Model Regulation.

Other Changes to the Model Regulation

All Medigap carriers are required to provide notification regarding the insured's options and rights to each individual insured with a Medigap plan that covers outpatient prescription drugs during the 60day period immediately preceding the initial Part D enrollment period. Generally, the initial enrollment period for Part D is the same as the initial enrollment period established for Part B. However, for those individuals already eligible to enroll in Part D as of November 15, 2005, the initial enrollment period for Part D begins on November 15, 2005. The Secretary of Health and Human Services is working in consultation with the NAIC to develop the required notification.

Certain provisions of the Model Regulation require reinstitution of previous Medigap coverage that was suspended at the option of the policyholder for specified reasons. Clarification was added to the Model Regulation stating that if the suspended Medigap policy provided coverage for outpatient prescription drugs and the insured enrolled in Medicare Part D while their policy was suspended, the reinstituted policy will not have outpatient prescription drug coverage, but will otherwise be substantially equivalent to the coverage before the date of the suspension.

The required eligibility questions included on the Medigap application and the text of the notice to the applicant regarding replacement of Medicare supplement insurance have been revised to improve clarity and understanding.

The changes to the Medicare Supplement Model Regulation that were adopted by the NAIC reflect only the unambiguous provisions of MMA that directly relate to Medigap plans, with some minor exceptions for clarification purposes. This article has highlighted the majority of the amendments to the Model Regulation, but is not an exhaustive description. To review all changes to the Medicare Supplement Model Regulation visit *www.NAIC.org* to obtain a copy of the adopted version of the model. In addition to the changes specified in MMA, the NAIC was directed to evaluate the benefits provided by the standardized plans and recommend whether the number of plans available should be reduced. The NAIC Senior Issues Task Force has begun discussing this charge, but at this time it is difficult to predict what recommendation might be made. 🕰

The Art and Science Of Pricing Small Group Medical Coverage Two General Approaches To Pricing

by William R. Lane

n the surface, it might appear that there are as many ways to price medical insurance as there are carriers that underwrite it. In reality, most carriers use one of two main approaches in pricing group medical insurance. These two approaches can go by many names (or no name at all). I refer to them as the "Forecast" approach and the "Rebuilding" approach.

At its core, the Forecast approach works by taking historical earned premium and historical incurred claims and projecting them into the rating period. The projected loss ratio is compared to the desired loss ratio and the rate action is the increase in current premium needed to make the loss ratios identical. I refer to this approach as Forecasting because it typically explicitly develops an expected loss ratio for the future rating period in the absence of a rate action.

In its most simple form, the approach simply compares the current loss ratio to the desired loss ratio and combines the needed corrective action with trend.

In other cases, some carriers will develop per member per month (PMPM) incurred claims and PMPM earned premiums by dividing incurred claims and earned premium by a total member month count. They then compare the PMPM claims to the PMPM premium. Mathematically, when you divide the PMPM claims by the PMPM premium, you cancel out the member month count. Hence, this approach is still what I refer to as the Forecast approach.

At its core, the Rebuilding approach works by splitting the historical incurred claims into various components usually based on the type of service, supply or additional benefit, and then dividing these amounts by the number of member months which were included in the historical period. These PMPM amounts are adjusted for trend and sometimes other factors. The trended amounts then become the basis for the next time period's pricing. I refer to this approach as Rebuilding because it typically produces the new rates by "rebuilding" the base rates by type or benefit. Typically in a rebuilding approach, the cost for each service, supply or benefit is at 100 percent coverage without reduction for copays or other cost sharing. This is different from the typical Forecast approach that usually looks at actual incurred claims after cost sharing and compares it to earned premium that has been adjusted for the plan of benefits.

The key difference between the two approaches is that the Forecast approach incorporates the various risk factors by using actual premium that should already have these factors built into it. The Rebuilding approach must acquire the rating factors separately because they are not inherent in a normal member month count.

Neither approach is universally better than the other.

The Forecast Approach

The Forecast approach often uses only financial statement data or the equivalent. Since this information is required for other purposes and is heavily audited, the data for pricing is relatively easy to acquire and accurate. The calculations are relatively easy as well since the approach often uses a large block of business as a whole. It is also easy to explain. For example, a typical explanation might be that the loss ratio for the last year came in two points higher than expected, so the rate action is trend plus two points.

One common reason for using the Forecast approach is that the data to perform a Rebuilding approach is simply not available or is not deemed to be sufficiently accurate.

The Forecast approach has a number of drawbacks as well. It assumes that various rating factors such as age gender slopes are correct. It also assumes that if the age gender of the underlying block is changing, then these factors, as used in setting actual premiums, will compensate in an appropriate manner. Since not all rating factors can be used to the extent of their actual values, this is not a correct assumption. It is often, but not always, "close enough."



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To illustrate what can occur, consider that smaller groups, particularly one employee groups and two employee groups, tend to have significantly higher morbidity than larger groups even after health status is considered. If the carrier has no size factor or a size factor that is restricted by law to less than the real change in risk, then the carrier is at risk for a change in the average size of its groups. If the average group gets smaller in the future, then rates will be inadequate and vice versa.

Another key difficulty in the Forecast approach is taking prior rate actions and benefit changes into consideration. Ideally, you would want the earned premium to be based on the same rate basis throughout the experience period. In reality, this is often not the case. One relatively simple approach is to split the experience into each renewal month. Generally speaking, this keeps the same base rates for all cases and allows for easier consideration of prior rate actions.

If plan factors are considered to be reasonable and do not need significant change, there might not be any reason to adjust for plan changes. If they are known to be inconsistent, then adjusting for them becomes a challenge. This is quite important because, in the real world, underpriced benefits will grow as a percentage of the total block and vice versa.

Other factors that can change for the whole block include anti-selection (either a stagnant block that is increasingly anti-select or an increasingly select block with growing new sales), the discount for negotiated networks, plan factors (which change with inflation) and shifts within area if the area factors do not compensate. Since most states do not allow the full range of risk factors or the full annual change in risk factors, the average risk factor allowed by law may not match the average risk factor of the block. This also needs an adjustment.

Yet another drawback to the Forecast method is that trend will need to be leveraged by the deductible levels of the various benefit designs. This is particularly important in pricing the drug card benefit where fixed dollar copays can be a sizeable percentage of the average cost per prescription.

The Forecast approach generally requires that special studies need to be made to determine if the underlying rating factors are appropriate or need to be changed. A review of general factor appropriateness can be built into the rating approach, but it isn't easy to do. One "special study" that is almost always required is a continuation table where claimants are sorted by the size of their annual cost (before deductibles and coinsurance). Others include splitting the benefits by type of service. Special studies also have the drawback that they frequently take place during times of lower activity and the data being used is not the same data that was used in re-rating the entire block. It is more recent if nothing else. This can lead to mismatches.

To illustrate what can occur, consider that smaller groups, particularly one employee groups and two employee groups, tend to have significantly higher morbidity than larger groups even after health status is considered.

The Rebuilding Approach

The Rebuilding approach requires significantly more data. Not only do you need claims and member month counts, but you also need rating factors at the group, subscriber or member level. Member months are generally not audited like financial data, particularly outside of the HMO environment. In addition, rating factors can be difficult to obtain. For example, a computer system might contain the zip code of the member, but if the group is priced according to the zip code of the group itself, then the appropriate area factor for each member must be found in a group level data record. Values that are paid by the carrier or collected by the carrier tend to be heavily audited. Factors that are entered into a system, but not used in any payment, tend to have more uncorrected data entry errors.

Another issue with rating factors is that they need to be as of the date the rates were developed. Thus, unless all cases are re-rated as of issue and changed to the demographics and other rating factors as of that date, the computer system ideally would capture the rating factors (and the data item that correlated to them) when the rates are run for the final time. Some factors such as group size can change rapidly, and the changes are not always random. For example, it is not unusual for groups to be larger when rates are initially requested and then they "shrink" at issue or soon thereafter. Thus,

(continued on page 12)

the group size factor used for rating the actual case might be set at a level appropriate only for a larger group. Hence, you can't accurately recreate actual premium levels using the current size of these groups.

One method for testing the validity of member month counts and rating factors is the process of recalculating what the actual premium should be for a block of business. Typically, the estimated total premium and the actual earned premium will vary by more than an immaterial amount. There are many reasons why this is so, but essentially they all go back to missing data or inaccurate data. In some cases, however, the difference remains a reasonably constant percentage difference. If this is the case, you might be willing to simply assume this factor will remain constant in the future rather than go to the effort of correcting all rating factors.

There are several advantages to the Rebuilding approach. It tends to better fit the HMO benefit structure where benefits are paid at 100 percent less a copay. Splitting the claims into these benefit amounts and knowing the number of claimants allows for an easy calculation of plan factors. Negotiated network reimbursements tend to be easier to apply with the Rebuilding approach. Having the data by benefit generally allows for an easier time in modeling the impact of changes in a negotiated arrangement.

Historically, HMOs have viewed both their premium and their claims on a PMPM basis. Often, senior management does not adjust these amounts for significant rating factor changes. Thus, senior management might believe that premium is satisfactory simply because the PMPM premium has reached a specified target. If you are using the Rebuilding approach and have the rating factors available, you may be able to spot that the age gender factor has increased due to a lower percentage of children. In reality, the HMO might not be achieving the premium results that it originally budgeted. Simply because it does tend to "fit" an HMO mentality, most HMOs use some form of the Rebuilding approach.

Generally, there is no need to be concerned with prior rate actions when using the Rebuilding approach except when attempting to recreate historical premium.

If you have captured all of the rating factors by member, then performing special studies to review the rating factors is much easier. It is also more likely to be more accurate since the data for the factor study is identical to the data used in rerating the entire block.

The Rebuilding approach also has significant drawbacks. The most serious is usually the accuracy of the rating data. It is often inaccurate to a degree and the inaccuracy is not necessarily self-correcting. For example, suppose the computer system with member data shows whether the "subscriber" has employee only coverage, employee plus spouse coverage, employee plus children coverage or full family coverage. Now, also suppose that the carrier allows dependents to have coverage without a member under specific situations. Unless the member record clearly shows that no employee is covered under these "subscribers," the assumed exposures will include employees that do not exist. This will lead to a lower than actual historical PMPM claim value. The following year, the calculation will continue to be lower than actual.

Such problems with data occur in almost all systems and are intensified by the number of separate computer systems that carriers use. Data may be accurate for one system, but not another.

Another drawback to the Rebuilding approach may be that it is more difficult to explain. Trended claims divided by adjusted exposures are not what a typical marketing officer thinks about.

Yet another drawback to the rebuilding approach is that by building up a number of pricing pieces from scratch, it becomes more difficult to apply reasonableness tests. The hospital cost may have risen significantly, but the physician costs appear to be reduced. Should the physician costs be used as is or should you assume they actually increased as well? If the local hospitals have started including radiology, pathology, anesthesiology and emergency physician costs in their charges, the combination might be correct. When everything is "thrown together" under a typical Forecast approach, the increase in the total is more likely to be what you expect. The finer you split the benefits under a Rebuilding approach, the more difficult it is to apply reasonableness tests.

The most serious drawback to the Rebuilding approach is the data accuracy issue. The Forecast method uses premiums and claims that can usually be compared to readily available financial statement values. There are no comparable figures against which the Rebuilding approach values can be compared. Unless the rating values can be used to recalculate historical premium, there is no simple method of assuring their overall accuracy.

The Best Approach

What then is the "best practice"? Assuming resources can be made available on a cost-effective basis, the best approach is to do both. If the same assumptions are applied to both methods, they should result in the same answer. If they do not, something is wrong and it is worthwhile to find out the differences. If nothing else, using the detailed data from the Rebuilding process to calculate historical earned premium and then comparing this figure to actual earned premium provides an extremely valuable cross check.

In the real world of scarce resources, a number of considerations need to be made in selecting a rating approach. Computer resources are a critical consideration. The sheer volume of data required by a Rebuilding approach is a significant drawback unless the systems already exist.

The size of the block is also a consideration. Basically speaking, the smaller the block, the less credible the experience. Hence, for a smaller block, a Forecast method (which lumps all experience together) tends to be better simply because the values produced by a Rebuilding approach are not credible. If you are starting a new block of business, you have no historical experience and will need to base your rates off of whatever information seems most appropriate (probably information purchased from a consultant).

In either approach there are issues that should be considered. For example, extremely large claims will distort the results. If you know the number and size of the large claims in a block, the Forecast approach tends to be easier to adjust for an abnormally high or low number of large claims. If you have frequent changes in negotiated network arrangements, the Rebuilding approach tends to make it easier to implement these changes in pricing. Bonus payments to provider groups tend to be handled easier with the Forecasting approach since they are thrown in with all other claims. Distributing bonus payments, after the fact, tends to complicate the Rebuilding approach.

Whichever approach is used, a valuable cross check is to use the re-rating information to forecast the expected experience of the new and renewal block in the following time period. This should then be compared with the actual experience on an ongoing basis. Any significant differences are a just cause for further research and possibly future refinements in the rating process.

The Society of Actuaries Announces Co-Sponsorship of the 2005 GUAA Annual Meeting

May 22-25, 2005

Grand Hyatt San Francisco on Union Square

Specific sessions will address actuarial and underwriting issues, such as pricing, product design and industry experience. A major focus will be on underwriting issues and the integration with the actuary's work. Participants will have the opportunity to see and discuss first hand what happens to actuarial theory when it is practically applied by underwriters in an environment influenced by market pressures. Separate tracks will address group life, long- and short-term disability, medical, dental and reinsurance.

Don't miss this great opportunity to learn from and network with our underwriting colleagues.

Please refer to the SOA (*www.soa.org*) or GUAA (*www.guaa.com*) Web sites for fee information and session descriptions.

The Bottom Line on Behavioral Health Care Costs

by Steve Melek

hat are the real costs of behavioral health care today? To answer this question most payers look at their behavioral health carve-out spending and claim that costs have remained level over the past decade or perhaps even decreased. This is a result of the excellent job that managed behavioral health care companies have done in managing specialty behavioral health care over this period. However, by only examining carve-out spending, payers are overlooking significant mental health expenditures from treatment by Primary Care Physicians (PCPs). Under our current health care system, PCP involvement in behavioral health care delivery may lead to less efficient and effective treatment and is an increasing cost that many plans haven't yet begun to address.

If one only considers the carve-out piece when analyzing mental health care spending, costs have indeed remained fairly level. However, this approach disregards the portion of mental health care that comes from primary care physicians. PCPs are the sole deliverers of about 50 percent of mental health care, and also prescribe two-thirds or more of all psychopharmacological drugs. These costs are not included in mental health carve-out expenditures. Considering these facts, it becomes serious obstacle to delivering it effectively. In many cases, failure to recognize a mental condition leads individuals to seek treatment from their PCP. This is in large part due to most people's inability to differentiate between the symptoms of a mental health condition and a physical illness. Mental illness often manifests itself through physical conditions such as headache, backache, nausea, fatigue, or even chest pain. In fact, there is a positive correlation between the number of physical symptoms and the prevalence of mood and anxiety disorders. As the number of physical symptoms increases, the more likely a mood or anxiety disorder exists.

In fact, only a small percentage of the population with mental disorders or emotional distress will ever see a mental health professional and many will remain untreated. Because a patient generally spends only 12 to 16 minutes with their PCP, little time is available to adequately assess multiple and/or vague symptoms, make a diagnosis, and develop a treatment plan. Physicians may be able to treat symptoms in such an environment. However, the underlying mental condition often remains undiagnosed. In these cases the individual may experience temporary symptomatic relief, but



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obvious that mental health costs are increasing. The distribution of private insurance mental health expenditures over the last decade shows a steady decrease in facility and professional costs and an increase in prescription drug costs. Together these result in a net increase of approximately 7 percent annually. These costs exclude the additional costs of treatment by PCPs for physical symptoms associated with mental health conditions.

The high contribution of PCP costs to total mental health expenditures reflects a lack of public understanding about behavioral health care and is a



Source: National Estimates for Mental Health and Substance Abuse Treatment, 1991-2001, USDHHS, SAMHSA, March 2004



Source: Kronke et.al. Physical Symptoms in Primary Care; Predictors of Psychiatric Disorders and Functional Impairment, Archives of Family Medicine. 1994, 774-779.

will often return with different or more persistent problems. When referrals to behavioral health care specialists are made, 50-90 percent of patients are noncompliant and never see the specialist. Ultimately, PCP utilization becomes higher than necessary and the patient is inadequately treated.

When the PCP does diagnose a mental condition, they may prescribe a psychopharmacologic agent. Sometimes patients will even request such medication on their own. However, these medications require close monitoring and supervision to determine proper dosage and reduce side effects. PCPs see over 30 patients a day and lack the necessary time to educate and counsel patients about these drugs. Thus, the agents are often used improperly and are less effective in addressing the patient's condition.

I believe that a substantial opportunity for savings in health care exists from more effective and timely treatment of mental health disorders. After auditing total mental health care spending to identify areas of wasted spending, there are generally three areas of focus to improve quality and value from mental health care: benefit design, PCP support and patient education.

For example, changes in benefit design to improve quality may include removal of barriers, such as higher copays to visit behavioral health specialists, which discourage patients from seeking proper care for their conditions. The use of pharmacy benefit managers to help monitor drug utilization and patient compliance is an example of PCP support that may help improve mental health care provided in the primary care office. Finally, disease management programs that monitor patients and provide 24-hour call-in lines may aid in providing patient education about their mental disorder and treatment plan.

This is particularly important for mental illnesses where medications take much longer to become noticeably active and have the challenge of more immediate side effects.

The bottom line is that, like other areas of health care, mental health care costs, when considered in their entirety, are also increasing rapidly. We need to be continually exploring new methods to reduce and manage them. By focusing on systems that get patients the right mental health care at the right time, improving patient adherence to drug treatment regimens, and aligning incentives in physical and behavioral health care benefit plans and delivery systems, not only can health care be greatly improved, but the bottom line can be as well.

The Costs of Mental Health Parity

by Steve Melek

The Mental Health Parity Act of 1996 required that the annual and lifetime dollar limits of L mental health benefits and medical benefits be equal for employers with at least 50 employees offering mental health coverage. Since its implementation, new federal proposals have been presented that would extend the 1996 Act, some requiring full parity for all categories of mental health conditions as listed in the DSM-IV (the Diagnostic and Statistical Manual of Mental Disorders). Opponents of such legislation argue that the combined pressures of general cost increases and a need to pay fully for mental health care will make it impossible for employers to continue offering affordable coverage, often citing initial estimates that placed resulting premium increases from full parity between 3.2 percent and 8.7 percent. However, as actual experience has emerged, it has become clear that these estimates were conservatively high. In fact, with implementation of mental health parity at the same time as managed behavioral health care, many states have discovered that overall health care costs increased minimally and in some cases were even reduced.

The three primary drivers of cost increases from mental health parity legislation have been identified by both sides of the issue, and include:

 The levels of mental health benefits already existing, including calendar year benefit limits and levels of insured coinsurance, copayments and deductibles.

- The degree of utilization management that existed or that would be implemented with parity.
- The degree of shift in services from the public sector to the private sector after parity.

While parity does not require mental health coverage to be offered by employers, when coverage is provided it may not be limited more than medical coverage. Thus, the impact of this legislation will be minimal if benefits offered under the current plan are similar in richness to mandated benefits. In the case that mandated benefits are significantly richer, utilization will likely increase. However, implementing managed care for behavioral health care may limit the effects.

As debate over the federal legislation continues, 35 states have enacted their own versions of mental health parity laws. The emerging results of their programs dispel the cost arguments of parity critics. These states are finding cost increases of less than 2 percent and in some cases cost *decreases* of up to 50 percent, depending on whether mental health care management was already in place. The following table summarizes the results from various state parity programs.

IMPACT OF STATE PARITY PROGRAMS				
State	Parity Type	Managed Care Change	Cost impact	
North Carolina, 1991	Full Parity for State Employees	Implemented at time of parity	Mental Health Costs changed from 6.4% of total health costs to 3.1% in 6 years	
Texas, 1991	SMI type for State Employees	Implemented at time of parity	48% decrease in the cost of behavioral health care in managed care plans	
Minnesota, 1995	Full Parity	No change	\$0.26 pmpm increase for 1 large plan; 1-2% increase for state employees	
Maryland, 1994	Full Parity	No change	0.6% increase in health care costs	
Rhode Island, 1994	SMI Parity	No change	0.33% increase in health care costs	

IMPACT OF STATE PARITY PROGRAMS (Cont'd)

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State	Parity Type	Managed Care Change	Cost impact
New Hampshire, 1994	SMI Parity	No change	1.5% increase projected; actual increases in health care costs less than that or even flat
Maine, 1995	SMI Parity	No change	Behavioral health care costs as a % of all health care costs changed from 4.66% to just 4.67% of total
Colorado, 1997	SMI Parity	No change	Increase in total health care costs of 0.2%
Vermont, 1997	Full Parity	No change	BCBS Plan found that behavioral health care costs rose from 2.30% to 2.47% of all health care costs

SMI parity designates parity for severe mental illnesses only (such as schizophrenia, schizoaffective disorder, bipolar affective disorder, major depressive disorder, specific obsessive-compulsive disorder and panic disorder) as defined within the legislation.

There is also evidence, besides the emerging experience of these states, that the initial cost projections for mental health parity programs were too high. Industry experts have made more recent projections based on current data, the most telling of which are highlighted below.

- In March of 1998, RAND published a case study of the Ohio State Employee Program's experience for mental health and substance abuse parity. The main result of the study was that costs for behavioral health care remained low and even declined under managed care. According to the authors, "the implementation of managed care by far overwhelmed the effect of benefit expansion."
- In October 1999, RAND provided testimony to the U.S. House of Representatives Subcommitee on Criminal Justice, Drug Policy and Human Resources that the additional cost of adding full parity for substance abuse benefits to a plan that previously had provided no substance abuse benefits is in the order of 0.3 percent for HMOs.
- In June 2000, the National Advisory Mental Health Council (NAMHC) updated their 1998 estimate (ranged from 1 percent to 4 percent by plan type) for the cost of mental health parity to an aggregate increase of 1.4 percent, based on an evolution of assumptions in their model and new data. In a report to Congress entitled "Parity in Coverage of Mental Health Services in an Era of Managed Care," the NAMHC found that "based on empirical studies and economic stimulations across diverse populations, managed care approaches and parity structures suggest that the introduction of parity in combination with managed care results in lowered costs and lowered premiums (or, at most, very modest cost increases) within the first year of parity." They also included "these findings do not support earlier concern about potentially high financial costs caused by parity."

In 2000, PricewaterhouseCoopers produced a mental health parity report for the American Psychological Association. They reported that "to date, there are no examples where mental health parity has been enacted in a state and costs have dramatically increased," and that there "are no examples where mental health parity has been enacted in a state and a measurable increase in uninsured has been detected."

• The Office of Personnel Management (OPM) is responsible for implementation of the 2001



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parity coverage for the Federal Employee Health Benefit Plan (FEHBP). They expected increases in total health care benefit costs of 0.2 percent to 0.5 percent due to parity.

- In July 2001, RAND provided additional testimony that "parity in employer-sponsored health plans is not very costly under comprehensively managed care, which is the standard arrangement in today's marketplace. The total cost of providing parity-level benefits is less than the increase of benefit expansion claimed by recent actuarial studies."
- In August 2001, PWC projected that the Mental Health Equitable Treatment Act of 2001 would cost employers 1 percent or \$1.32 per enrollee per month. Parity in this Act is required for innetwork services only, where providers have typically agreed to discount their fees. The CBO estimated that this Act would raise health insurance premiums by 0.9 percent.
- In February 2002, Mathematica submitted a report on the California Mental Health Parity Law to the California HealthCare Foundation. The California bill, effective in July 2000, included SMI and SED (serious emotional disturbances in children). Mathematica found "the law did not appear to have had any adverse consequences on the health insurance market to date, such as large increases in premiums or decreases in health insurance offerings by employers. Although employers faced premium increases of 10 percent to 20 percent in 2001, little of the increase was attributed to parity."
- In 2004, the CBO modified their estimate of the expected cost impact of national mental health parity to 0.8 percent of total health care costs (down from their prior estimate of 0.9 percent). This reflects the aggregate expected impact on all states given the current status on mental health parity by state.

The combination of actual state-specific experience under various parity programs with the revised downward projections of several key organizations narrow the expected cost impact of national mental health parity legislation to a reasonable range. The bottom line is that evidence now exists supporting the argument that mental health parity laws have very little impact on the overall health care costs. Offering mental health benefits at the same level as medical benefits may be an efficient, affordable way to improve the quality of the insureds' lives and protect them from catastrophe.

It should be noted that mental health benefits in health insurance policies typically include services provided by specialty mental health providers such as psychiatrists, psychologists, masters-level social workers, and other approved mental health specialists. Services provided by primary care physicians and psychotropic drugs are considered to be medical benefits and are not restricted by limited mental health benefits. The use of these and other medical services to treat behavioral health conditions have soared in recent years. This is discussed in greater detail in the preceding article in this edition, "The Bottom Line on Behavioral Health-Care Costs."

CHAIRPERSON'S CORNER | FROM PAGE 3

talent and resources currently in place in both groups that Health Section members and all practicing health actuaries will benefit in the manner intended by this change in structure. The bottom line is this—whatever structure we use is nothing without the great volunteer support we have—the SOA is just trying to organize that volunteer base so that it is utilized in the most efficient manner possible.

What does this mean? HSC members will serve as coordinators for the Health Section's role in the following areas of activity:

- Secretary/Treasurer (Bill Lane)
- Communications and Publications (Lisa Tourville)
- Basic Education (Damian Birnstihl)
- Continuing Education (John Lloyd, Craig Kalman, Lori Weyuker)
- Research (Bryan Miller)
- Professional Community (Mark Billingsley)

The HSC as a whole will be engaged in other important activities, such as identifying key issues facing health actuaries in their current professional environment. Others (invited advisors, liaisons, friends, etc.) may support the HSC in these activities by providing additional perspectives and volunteer muscle. (To volunteer, see new opportunities for the health section participation on page 27.)

Please note that Lori Weyuker is also serving as vice chair of the HSC this year.

At this point, the plan is that these coordinators will rotate every year to ensure that new perspectives are introduced on a regular basis. A longer-term underlying volunteer structure will ensure that the necessary continuity will be in place. Thanks to all of these HSC members as they work to support all of us in their respective areas.

I could say a lot more about all of the changes underway and all of the work being done to support the section membership, but I'll save it for a later time!

Two things I'd like to ask of the Health Section membership over the coming year:

- Please be patient with us as we work through this transition. We're trying to provide higher levels of service, and I believe we ultimately will; however, there may be some "bumps in the road" in the short term. Please contact me if you think anything important to you might be slipping through the cracks.
- Please volunteer!!! There are many areas where more volunteers are needed. Are you interested in information regarding opportunities for service? Please contact myself or Kara Clark of the SOA.

Final thoughts:

- Many thanks to HBSPAC members, and we hope you'll continue to serve the SOA/Section membership as you have been.
- Thanks to all of the SOA staff for their support, but especially Sue Martz for keeping us organized, and Kara Clark—without her, much of what you see wouldn't happen (or at least not during my tenure).
- A special thanks to Lois Chinnock, who will be missed very much!

Please feel free to call or e-mail me questions/comments at (317)580-8661 or *kvolkmar@unitecactuarial.com*. I look forward to a great year!

THE FORMULARY DECISION PROCESS | FROM PAGE 1

pharmaceuticals to cover. Formularies have been implemented, relying upon differences in cost sharing to steer members and their physicians toward less costly or more cost effective choices. A critical role in this process is deciding which pharmaceuticals are to be covered and at what level of cost sharing. Pharmacy and Therapeutics (P&T) Committees typically make these formulary decisions, and to do this effectively, they need good information. To make the best drug coverage decisions, a P&T Committee should study efficacy, safety, effectiveness, and pharmacoeconomic data.

Since the FDA requires extensive efficacy and safety data in order for a drug to gain its approval for sale in the United States, pharmaceutical companies have this type of information readily available.

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John R. Watkins, Ph., MPH, is a pharmacy manager in formulary development at Premera Blue Cross in Mountlake Terrace, Wash. He can be reached at (425) 918-5146. Efficacy research is designed to prove a drug's scientific value in an ideal setting. However, this setting will not be seen outside of a specifically designed and controlled experimental environment. Use of a drug in a typical health care environment, where compliance may be less than perfect and patients may have concurrent medical conditions, is more apropos. A drug's usefulness for treatment in the latter environment is called effectiveness. Effectiveness gives a better idea as to how pharmaceutical use will impact patients in the real world. However, effectiveness studies are less common because they are not necessary to gain FDA approval for a drug and they are expensive to conduct.

More rare are studies of the pharmacoeconomic properties of pharmaceutical use. Such studies attempt to show the costs associated with using a drug. Costs are typically assessed in one of several ways, which will be discussed later in more detail.

Standard Pharmacoeconomic Analysis Methods

As a field, pharmacoeconomics is fairly young and has a very academic feel. Much of the research done on the cost impacts of pharmaceuticals uses techniques adapted from the field of economics, including cost-minimization analysis, cost-effectiveness analysis, cost-utility analysis and cost-benefit analysis. These methods are described below.

Cost-minimization analysis (CMA) is the simplest of the methods listed. Cost-minimization analysis identifies the least expensive option among several with equivalent effectiveness.^{iv} For example, a cost-minimization analysis would conclude that the less expensive of two equally effective ace inhibitors is the preferred choice. CMAs are rarely done because few clinical trials result in the conclusion that a drug is equal to its comparator. Most aim to show its superiority.^v This method neglects other important variables such as the cost or unpleasantness of possible side effects.

Cost-effectiveness analysis (CEA) is done to determine the cost per unit of effectiveness, resulting in a cost-effectiveness ratio. This ratio can be stated as the cost per unit of outcome, or units of outcome per dollar spent. Outcomes are measured in terms of clinical events such as heart attacks, hospital days avoided or life-years saved. A lower costeffectiveness ratio (cost per unit of outcome) is associated with a preferred treatment choice. The preferred choice is not necessarily the least expensive one, however, since the health gain of the options can vary as well. CEA can be a robust analysis, taking all associated costs and savings into account. However, there is considerable variation across CEA studies with respect to types of patients examined, measures of effectiveness and costs used, and the way in which cost-effectiveness ratios are calculated and reported, which can make their interpretation and comparison difficult.vii

The most meaningful CEA analysis is the calculation of the incremental cost effectiveness ratio (ICER) between two alternative treatments. This requires data from head-to-head trials or at least from different trials that were fairly similar in study population and methodology. Since most clinical trials are sponsored by the manufacturer of one of the drug products within the study, they rarely provide all the direct comparison data needed to answer the questions a health plan is asking. A rare exception is the recently published PROVE IT study, which compared two cholesterollowering drugs, Pravachol and Lipitor. Although the maker of Pravachol funded the study, it showed that Lipitor was better.viii This outcome probably makes it is less likely that other drug companies will want to fund head-to-head trials in the future.

Cost-utility analysis (CUA) is done to assess the cost per outcome unit that is adjusted for patient value placed on those outcomes.^{ix} Rather than simply assessing life-years saved, for example, the CUA would assess the cost per Quality-Adjusted Life-Years (QALYs) saved. For example, a patient whose work requires a lot of standing and walking might assign more utility to an orthotic device (a gait-correcting shoe insert) than a patient who does little standing or walking. Critics of CUA maintain

that it is difficult to use and compare because there are numerous different ways to assign health status, no agreement upon what constitutes the gold standard, and whose preferences are measured—patients, providers or public—affects the results.^x

Cost-benefit analysis (CBA) measures the cost per outcome where outcomes are translated into dollars. In the example above, the patient whose work requires a lot of standing and walking might be willing to pay more for an orthotic device than the patient who does little standing or walking. The cost to buy the device can be assessed against its value stated in dollars. This method has the drawback of having to obtain assessments of the monetary worth of health outcomes. In evaluating pharmaceuticals, CBA is often used to compare the cost of a more expensive drug with the expected savings from reduced need for other medical costs such as physician visits, hospitalization or emergency room care, thereby sidestepping this drawback.

Whereas studies using the methods above may be available to P&T Committee members, their results are not well suited to the needs of a health plan. Such results may help to determine which of the drugs compared in one study seems to be the better choice from a cost perspective, but they do little to help health plan decision-makers quantify how and where drugs will have an impact on the overall budget.

Pharmacoeconomic analyses often rely upon information from multiple sources, with potentially complicated study designs, making them difficult to perform and analyze. A study of submissions reviewed by the Australian Pharmaceutical Advisory Committee found that 67 percent of 326 pharmacoeconomic analyses had serious flaws.^{xii} The resources available to make that assessment were considerable, possibly beyond the capacity of many individual health plans. While this may contribute to a health plan's reluctance to use such information, to avoid doing so misses a real opportunity to add value to the formulary decision process.

The Development of the AMCP Format for Formulary Submissions

In an effort to counter some of the problems with available research on pharmaceutical costs, the Academy of Managed Care Pharmacy (AMCP) developed and disseminated the first Format for Formulary Submissions in 2000. Version 2 of the Format, released in 2002, incorporates user feedback.^{xiii,xiv} The Format is a guideline that specifies what information health plans want to see from drug manufacturers in order to help them make informed, evidence-based, drug coverage decisions. This information includes data on efficacy, safety, effectiveness and economic impact of a new drug. The Format puts responsibility on pharmaceutical manufacturers to provide all information available in a standardized format.

Since the release of the latest guidelines, AMCP reports that adoption is spreading at a rapid pace. To date, no large studies exist on the impact of the Format on patient outcomes.

Proponents of formulary guidelines maintain that the Format makes great strides in leveling the playing field between manufacturers and health plans. The Format creates a standard for constructing, presenting and critiquing models. Early experience suggested that manufacturers were unwilling to comply with dossier requests. However, recent information has suggested that most are now submitting dossiers, but they are frequently incomplete.

The P&T Committee

To better understand the process used by P&T Committees in formulary development, one of the authors did some informal observations of P&T Committees and their decision processes. Another of the authors is a formulary manager and leading member of a P&T Committee. This section will discuss P&T Committee features, relying to a large extent upon these observations.

A lot of research is gathered in preperation for a P&T Committee meeting where drug coverage decisions are made. As discussed above, information is gleaned from pharmaceutical manufacturer dossiers, published research, FDA analyses published on their Web site, and possibly modeling and analysis done by the health plan itself. The pharmacy staff normally conducts a search for relevant primary literature using MEDLINE and possibly other databases. Secondary sources such as Cochrane reviews may also be consulted. Summaries of the information from these sources, and sometimes research articles themselves, are distributed to P&T Committee members prior to a meeting.



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(continued on page 22)



The P&T Committees we have seen are comprised of primarily physicians and pharmacists. Other members included a psychologist, an osteopath, registered nurses and employer representatives. Two of the committees explicitly noted that only members not employed directly by the health plan were allowed to vote on formulary decisions. The PBM committee profiled allowed one vote per client, a representative of which sat on the P&T Committee. These committees ranged in size from 11 to 25 people.

In each meeting, a pharmacist or team of pharmacists gave a presentation of information about the new drugs under consideration. These presentations were brief, the details having been supplied to the members prior to the meeting, included formulary recommendations, and were followed by discussion from the group in general. The discussions were very interactive, with many questions and dissenting points of view. In every meeting observed, at least one recommendation made by the presenting pharmacist(s) was not accepted.

If needed, experts outside of the standard P&T Committee were asked to give relevant opinions and observations. The pharmacists who prepare formulary reviews usually consulted with one or more such experts prior to writing their recommendations.

Most of the discussion during the meeting revolved around drug safety and effectiveness. Information for this included both research findings and observations from clinical practice. Costs were not discussed much, although the price of the drugs and patient copays were mentioned several times. Cost offsets and total budget impacts were never discussed during meetings. One group explicitly avoided the subject of costs, focusing instead on selecting the most effective and safe drugs from a class of drugs and narrowing that list down to the best few. Once that list was determined, final formulary placement was determined by the deals that could be negotiated with the manufacturers.

While the subjects discussed were pertinent to the particular drugs under consideration, several interesting and fairly animated discussions occurred around the following topics.

- During the educational component of one meeting, a presentation was given on special features of biotech drugs, their anticipated utilization and costs as a class, and strategic initiatives to appropriately plan for their influence on treatment and the pharmacy budget.
- One group brought up a perceived connection between the FDA and the pharmaceutical industry and the expected impact on the FDA's ability to provide impartial expert opinions on products reviewed.
- Another discussion involved the desirability of covering drugs that provided no unique benefit to patients other than convenience. An example of such a drug is Seasonale, a new 3month course of oral contraceptive that allows the user to restrict menses to four times per year.
- Concern over the convenience and cost to patients when using the pharmacy benefit surfaced in several meetings. For example, some new drugs combine two drugs that are already available separately, but having them combined under one copay would save members money at the pharmacy.
- In another meeting, members expressed concern that patients might be confused when required to obtain prior authorization for an injectable drug and then have to write a large check at the pharmacy when this was not required for other drugs. The up-front payment requirement could discourage some members from filling prescriptions.
- Most meetings included some discussion of manufacturer strategic maneuverings. These included acknowledgements that drugs like

Clarinex which is slightly different from Claritin, or Nexium which is slightly different from Prilosec, or new formulations such as Wellbutrin XL (once per day) are developed to capture market share from another product from the same manufacturer that is about to lose patent protection.

- One meeting included a discussion on using clinical trial and other data to approve a drug for the formulary when much of the anticipated usage of that drug, such as the epilepsy drug Trileptal, would be off-label psychiatric use for which data was not available.
- Only one committee (a large PBM) specifically talked about rejecting pharmaceutical manufacturer models in favor of doing its own economic analysis. Other groups discussed costs of the drugs or copays, or mentioned when economic research was not part of the dossier (evidently not uncommon).

With increasing public attention to pharmacy benefit management processes, health plans should implement formulary decision making processes with the goals of improving clinical outcomes and reducing overall cost of care rather than simply maximizing rebates and minimizing drug expenditures. These strategies may also help to align incentives for health plans, physicians, pharmacists and patients. ^{xix}

Formulary Decision Making— What Do We Know About the Process?

Health plans, PBMs and hospitals follow the same general process when evaluating a new drug for formulary submission.^{xx}, xxi, xxii Guiding principles for clinical decision-making have been defined as follows^{xxiii}:

- Assess the findings of peer-reviewed medical outcomes research and pharmacoeconomic research,
- Employ published practice guidelines, developed by an acceptable evidence-based process,
- Compare the efficacy, effectiveness, value and therapeutic interchangeability,
- Compare drugs on patient compliance, and
- Do a thorough evaluation of benefits, risks and Adverse Drug Reactions(ADR).

In practice, P&T Committees examine safety and clinical effectiveness first, then the incremental value of a drug compared to existing alternatives. If a drug has superior clinical properties and has no equal counterparts, then it is added to the formulary. If a drug is inferior to an alternative on the formulary, then it is not added. If the drug shows effectiveness equal to a drug currently on the formulary, then costs are considered in the adoption process. If there are unanswered questions about the product's safety, the decision is usually deferred until more data are available.

Most sources of information, including manufacturer dossiers, published literature and FDA documents, focus on clinical and safety issues. Economic information is sometimes available. Current evidence suggests that pharmacoeconomic information is not widely used by decision makers, however.^{xxiv,xxv} Some reasons are listed below:

- Health plan decision makers are skeptical of information provided by drug makers.
- Decision makers report being uncomfortable with the extensive use of assumptions in pharmacoeconomic analyses. They prefer observed data.
- Health plan decision makers have a general concern about the aggregation of health benefits into a single index such as Quality–Adjusted Life-Years (QALYs) saved. They prefer to examine independent components.
- Impacts on the budget are often missing. When included, the cost of a new drug is often confined to its effect on the pharmacy budget alone. This misses the impact in other treatment areas.
- The information is not presented in language used by health plans. They want to know the effect on overall cost per member per month of their benefit, rather than the cost to prevent a hospitalization or cost per QALY gained.
- Pharmacoeconomic information typically lacks head-to-head comparisons with the most relevant treatment alternatives.
- Health plan decision makers need to know how a particular drug is going to affect their own population. Concern about transferability of model results is a barrier to their use.

(continued on page 24)

How Actuaries Can Help

The FDA does not have a mandate to evaluate a drug's cost-effectiveness as a part of the New Drug Application (NDA) process. Although an NDA submission includes a literal truckload of data, the FDA review focuses entirely on safety and efficacy. An expensive drug with only marginal clinical benefit may be approved if the reviewers conclude that the reported efficacy outweighs the potential toxicity, regardless of cost. Therefore, P&T Committees must do their own economic evaluation of new products if they are to weigh value in their decision-making.

Pharmacoeconomic research currently available to P&T Committees, although much improved following the dissemination of the AMCP Format, is not fully meeting their needs as indicated above. While conducting economic research is not particularly actuarial, modeling is. This seems to be an area where actuarial methods can fill a need.

The primary area in which the pharmacoeconomic modeling falls short is in the inability to specify and quantify any medical cost offsets associated with the use of a drug. While the AMCP Format calls for quantification of budget impacts in the models requested, health plan decision makers have expressed dissatisfaction with this element of the dossiers received. An informal review of dossiers submitted to one health plan over the past three years showed that no more than 15 percent of them contained useful disease-based models. When a reasonably constructed model is submitted, the health plan may still need to adjust the manufacturer's assumptions to get a relevant estimate.

Furthermore, economic models typically compare the manufacturer's own drug to a single comparator or to placebo. A more useful model would incorporate all the relevant treatment options for the medical condition of interest in a single headto-head comparison.

Models could be made more useful by the use of dynamic population modeling typically used by actuaries. Pharmaceutical company models are often based on populations studied in clinical trials, or on populations that come from canned databases rather than (a) reflecting the population of the health plan, and (b) allowing the user to manipulate the population mix. Population considerations should include features unique to the type of payer, such as commercial, Medicare, Medicaid or TRICARE populations.

An ideal model would incorporate these capabilities, reflect the prescription coverage benefit design, medical condition incidence and prevalence, the rate at which the new drug will enter the system and replace or supplement other treatments, utilization and costs associated with the medical condition and side effects of the treatment options, expected compliance rates, and the level of health care delivery management expected in the system. Estimates of parameters in this model can



be obtained from the medical literature, expert opinion about reasonable clinical pathways, study of prior claims data and other expert judgment.

The people best qualified to create such a model are in the actuarial area. It would not only be a valuable tool for the formulary decision process, but would have much more broad usability within the organization. Economic outcomes expressed in per member per month claim costs could be reviewed and used by actuaries when monitoring experience and preparing for pricing. Specification and quantification of medical cost offsets, or increases, that result from the use of drug treatments could be useful to people in care management and utilization management roles. Ultimately, pharmaceuticals are an integral part of good medical care and their costs should be viewed as part of the total budget. As biotechnology drives up the average cost of new drugs, a strong partnership between actuaries and pharmacists is crucial to the success of a health plan.

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IAA Health Section Update

Sections are becoming a key area of interest to the IAA (the IAA is an association of member national actuarial associations), and IAA's leaders are actively encouraging their development in order to bring together actuaries from around the world. IAA sections are grassroots organizations that largely set their own agendas, much like the very successful SOA sections.

The IAA Health Section Committee (HSC), which was formed in 2003 to lead the newly approved Health Section (HS), has been very busy planning how best to serve the needs of the international health actuarial community. Our three most important recent activities are: adopting a planning document entitled "Way Forward Proposal" (this important document can be viewed in the Health Section portion of the IAA Web site at *www.actuaries.org*), forming nine Topic Teams, and organizing a health track for the Paris International Congress of Actuaries in May 2006.

In late November the IAA's HSC held a conference call and, among other matters, agreed to form nine Topic Teams. These teams are designed to bring our HS members together to work on problems and areas of interest to a broad cross-section of our members—so they are vital to the HS's success. The new Topic Teams are as follows:

PRODUCT TEAMS

Long-Term Care Insurance (Avi Bar Or*, Israel) Income Protection Insurance Critical Illness Insurance (Sue Elliot*, U.K.) Private Medical Expense Insurance Voluntary Health Insurance (to supplement social insurance benefits)

PROCESS TEAMS

Health Risk Adjustment (Lori Weyuker*, U.S.A.)

POLICY TEAMS

Health Systems in Developing Nations (Alvaro Castro*, ILO - Switzerland) Public-Private Health System Partnerships Nontraditional Medicine (Heather McLeod*, South Africa) * Team Leaders

The goals for Topic Teams are to create an international community of actuaries and others (membership is not limited to actuaries) who seek to gather, discuss, research and disseminate information to our members. The HS (through the IAA Secretariat) has many communications tools to help the Teams to do their work: our Web site, listserver capabilities, online and teleconferencing capabilities, our Online Journal, the IAA's ASTIN Bulletin and periodic health colloquia and meetings. Teams are not limited to simply making use of these existing capabilities. They could, for example, decide to hold an international conference or join with other organizations to work on projects. What teams do is largely up to their members to decide. The IAA's HSC's role is to help teams to accomplish their goals. The "Way Forward Proposal" provides a more in-depth description of Topic Teams and their importance to our future.

Over the past few weeks, many IAA Health Section members have responded to communications from the IAA's HSC and volunteered to join the new teams. However, all of them still need more members, and many teams are in need of leaders.

Following on the success of our first two international health colloquia, one in Cancun during ICA2002 and the other earlier this year in Dresden Germany, we are actively planning our third international meeting, which will be held as a part of ICA2006 in Paris. We have formed an organizing committee headed by Claude Ferguson to coordinate our efforts with the Paris Organizing Committee to develop our scientific program. We plan an extremely interesting twoday health track which will provide health actuaries with opportunities to hear from experts around the world and explore many topics of interest to SOA and Academy members from an international point of view. Our HS Organizing Committee will provide members with more information about the program and how to participate by writing a paper or speaking on a panel. The HS Committee approved a 500 Euro prize for the best health paper submitted to ICA2006.

Our Topic Teams are certain to be important resources for all of us; however, they simply cannot function without your help. Please let me know if you are interested in joining a Topic Team or helping to organize the health track at ICA2006 by e-mailing me at *hbolnick@kellogg. northwestern.edu*. I also encourage those of you who have not already joined the IAA Health Section to go to the IAA Web site (*www.actuaries.org*) and sign-up by clicking on "How to Join" under the IAAHS (Health) tab. 2005 dues will be collected by your national actuarial organization some time next year.

Howard J. Bolnick CHAIRMAN, IAA HEALTH SECTION

New Opportunities for Health Section Participation

As you may be aware, the SOA has been making some changes in order to strengthen its grassroots connections through the special interest sections. To that end, the Health Section will be broadening its range of activities over the next several months. To support this expansion, the Health Section Council has or will be establishing a number of activity-based volunteer teams. In the near term, four teams will be focused on Communications and Publications, Continuing Education, Research and Professional Community (a.k.a., external relations).

The Health Section Council has been working with the health practice area volunteers to define the breadth of its activities for the future and this new organizational structure. At a meeting in Chicago on Dec. 3, both groups discussed the transition of the Health Section Council to this new role within the SOA's organization, as well as key issues facing the health actuarial practice in 2005. The key issues include:

- Health care affordability and financing;
- Outcomes measurement and cost/benefit studies to drive the efficient use of health care resources;
- Data requirements and mining to support such analyses;
- · Professional visibility in the health care industry

These issues will provide some focus for the Health Section's activity-based teams in the upcoming year. If you are interested in finding out more or participating as a member of one of these teams, please contact Kara Clark, the SOA's Health Staff Fellow, at *kclark@soa.org*. More information about the teams will also be included in the monthly editions of the electronic *Health E_News*.

Overview of Sessions at the 2005 Health/Pension Spring Meeting

In addition to a significant number of highly relevant, practical sessions in the traditional 90-minute format, the Health Section is sponsoring a number of featured embedded seminars within the SOA's Health/Pension Spring Meeting program. The seminars include:

- Affordability: The Market Response (3/4 day);
- Affordability: The Regulatory Response (3/4 day);
- An Introduction to Care and Disease Management Interventions and Their Implications for Actuaries (1/2 day);
- Financing Chronic Care (3/4 day);
- Electronic Medical Records: Impact on Providers and Health Insurers (1/2 day);
- MMA The Biggest Changes Since 1965 (1/2 day).

The SOA's Health/Pension Spring Meeting will be held in New Orleans, from June 15-17, 2005. For more information on these seminars and the other Health Section-sponsored sessions, please refer to the SOA's Web site at *http://www.soa.org.*

Availability of the Disability Chart Book

The SOA and the America's Health Insurance Plans (AHIP) have just released a jointly developed consumer Chart Book entitled, *Disability Insurance: A Missing Piece in the Financial Security Puzzle*, to educate the general public on the need for disability insurance coverage. The chart book is a graphic depiction, supported by narrative, of the fundamentals regarding disability risk, the financial risk of disability, and the availability and limits of public disability income programs. The chart book is directed primarily at media outlets and secondarily at consumers, employee benefits decision makers, and policymakers. The chart book was funded by the Actuarial Foundation.

The SOA's Disability Chart Book Task Force was chaired by Thomas R. Corcoran. Members included: Thomas M. Ciha, Kara L. Clark, Peter M. Crockett, Patricia J. Fay, Scott D. Haglund, Delaine B. Hare, Emily Kessler, Kenneth M. Latus, Debra Sue Liebeskind, Allen D. Livingood, Charles H. Meintel, Anne G. Mitchell, Alex N. Moral, Matthew R. Naughton, Lori A. Nelson, Kari C. Powell, Ellen J. Retz, Forrest Richen, Susan R. Sames, Robert E. Schneider, Bruce D. Schobel, Eric L. Smithback, Douglas W. Taylor, Amy Thompson, Maria N. Thomson, Charles M. Waldron, Carl A. Westman, and Thomas F. Wildsmith.

An electronic version of the chart book is available on the SOA Web site at: http://www.soa.org/ccm/content/areas-of-practice/health/publications-downloads/disability-insurance-a-missingpiece-in-the-financial-security-puzzle/

If you would like a hard copy of the chart book, please contact Susan Martz at *smartz@soa.org* or 847-706-3558. **4**