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## **Session 149L**

### **Applicant-Directed Underwriting**

**Track:** Product Development

**Lecturer:** DAVID NOLIN COOK

*Summary: Attendees learn about a unique approach to individual life product pricing and underwriting. The approach is designed to provide prospective insureds some control over the application process by offering them a range of premium and underwriting requirement combinations.*

*A lecture covering the concepts is followed by a brief case study. The case study illustrates the points in the lecture, as well as strengths and challenges associated with this approach.*

**MR. DAVID NOLIN COOK:** I am with Milliman USA in Omaha. The title of this session is "Freedom of Choice: Applicant-Directed Underwriting." It is based on an article by the same name written by Deb Schmidt, an underwriter in the Hartford office of Milliman, and me, and published in the February 2001 *Bests Review*.

During much of this session, I will talk about broad life insurance concepts and issues. Not all that I say will apply to every situation and there are certainly exceptions to many of the statements I will make. I would ask that you not let that distract you from following the main points of the presentation.

Finally, you will find this presentation easier to follow if you accept that I am trying, above all else, to describe an approach that is applicant-friendly, not one that is a natural extension of current practices. Let me begin by describing two situations: one that arises today and another that I believe will arise in the future.

You, the consumer, recognize a need for more life insurance coverage than you currently own. You respond positively to a magazine ad, a television commercial, an agent visit, an Internet banner or some other solicitation, and resolve to purchase a product. You begin the purchase process, only to find that you do not like the

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combination of premium and underwriting that is being offered. For example, you might find that the premium is very low and, therefore, attractive, but that the underwriting required is very extensive, and you really do not want to go through the process. You might be willing to pay a higher premium if you do not have to go through the underwriting required. Not finding the offered combination of premium and underwriting acceptable, you seek another company or another product. The result is wasted advertising on the part of the company, wasted time, an unsatisfied customer, and an application that is not taken. Let's accept that as a solvable problem.

Now, let me tell you a second story. It is some years in the future, and you, as a consumer of life insurance, again recognize the need for more life insurance coverage than you already own. Speaking to your computer, you provide certain personal and financial information and perhaps some health information. You have your computer assemble it into a software robot, and send it out into the Internet with all the information that you want to have used in underwriting your life insurance policy. You tell that software robot to interface with several life insurance company portals. Perhaps you tell it to go to three insurance companies whose names you recognize and maybe five or ten that it selects randomly. What comes back to you are quotes for life insurance that are based exactly on the information you submitted. Think of this as an ideal form of applicant-directed underwriting.

What I am going to talk to you about today is a step in that direction. The current life insurance market is characterized by a broad range of products: variable universal life (VUL), universal life (UL), guaranteed issue life, term life, and joint products. There are also many types of carriers: small, large, specialty, mutual, stock, and fraternal. Finally, there are several distribution channels: direct, agent, broker, bank, and work site.

As a consequence, life insurance buyers usually have many coverage choices. However, once an insurer and a product are selected, only those underwriting/premium combinations that are pre-selected by the insurance company are available to applicants, where an alternative exists. In some situations—the work site, for example—there may be no alternatives. The insurance customer may be required to select another product, another insurer, or another distribution channel to find the coverage that he or she wants. This is not a necessary situation.

In this presentation, I will use the phrase "underwriting/premium combination" to mean a set of underwriting requirements and associated premiums. For a given product, that might mean a fixed grid, perhaps indexed by policy size and issue age with a specific set of underwriting requirements for each. The key point is that the relationships between underwriting and premiums are fixed in advance. Near the end of the presentation, I will refer to underwriting/premium combination and "class" and mean the same thing.

Consider some simple reasons why the offered underwriting/premium combinations

might be unacceptable. Minimal underwriting requirements might produce premiums that are higher than an applicant wants to pay. The opposite may be true, as in my first story. Underwriting requirements may be inconvenient to satisfy, or they may reveal information that an applicant would rather not know. Perhaps the applicant just hates needles or simply does not want others to know any more about him or her than necessary. Perhaps the applicant thinks the required process of application and underwriting is too slow.

An applicant-directed approach, such as the one presented here, provides for a range of underwriting/premium combinations to be offered to the applicant. The applicant can then balance issues of price, intrusion, privacy, and convenience. Remember, my objective is to design a process that is more appealing to applicants, not one that fits well into established processes. I want to make it clear also that the process is not necessarily an Internet process. Even so, I think that data processing capabilities or a personal-computer-type presentation is required to present underwriting and premium combinations in the way I describe. With appropriate software and automated underwriting, the process can become, in most cases, a real-time interactive process. There are some exceptions that I will talk about later.

Let's review some applicant considerations in buying insurance. They are very simple and straightforward. I will move through them fairly quickly, relating them to an applicant-directed underwriting approach. First, there is price. As you know, the amount of underwriting is inversely related to claims and, therefore, the premium or cost of insurance rates for a product. More underwriting usually results in lower premiums, since most of the underwriting processes produce lower claims. The costs of underwriting processes are usually more than offset by their reduction in claims. An applicant can weigh this relationship in the application process. The question becomes, does a particular reduction in price adequately compensate the applicant for submitting to more underwriting?

The second applicant consideration is intrusion. The amount of time required, the amount of information disclosed, and the extent of applicant involvement all increase as additional underwriting occurs. As before, more underwriting generally results in lower premiums, because the cost of most underwriting processes are more than offset by the lower claims costs they produce. An application can weigh intrusiveness against premiums in an applicant-directed underwriting process. The question becomes, does reduction in price adequately compensate for the intrusion of additional underwriting?

The third issue—again, these are all simple and straightforward—is privacy. Privacy is perceived in our society to be a very valuable commodity, but we do not normally put a dollar value on it. Perhaps the greatest advantage of an applicant-directed underwriting approach is that it allows the applicant a greater degree of privacy, or at least perceived privacy, in the application process. An applicant can weigh privacy against premium in the application process. I do not honestly know how much dollar value can be placed on privacy. I think we will find out as time goes by,

but it will vary by individual. As you might expect, in terms of life insurance coverage, the cost of privacy may be very expensive.

Finally, there is convenience. Time is a valuable commodity in our society, perhaps valued even more than convenience. The opportunity to reduce the elapsed time that an application and underwriting process takes will have a value to some applicants. Like privacy, its value may be very significant to certain individuals.

The general approach of the applicant-directed process is to allow the applicant to balance price against preferences. The only practical way to accomplish this today is for an insurer to offer some number of discreet underwriting/premium combinations and to allow applicants to select the most attractive. The number of and the relationship between the combinations must be determined by the insurer in advance.

This is a complex process and requires careful coordination of marketing, underwriting, and actuarial expertise. It can be expected to produce results that differ by product, market, and distribution channel. I believe the key to making applicant-directed underwriting practical is a mechanism for organizing the available combinations for the applicant. The organizational mechanism I will describe today is a ratcheting mechanism. However, there may be other viable mechanisms.

Keep in mind as we consider this approach that the objective of applicant-directed underwriting is to provide customers with choices, one of which they find satisfying. Another way to think of this is as an attempt to capture every interested customer in some underwriting/premium combination. No applicants exit the process for lack of choice.

In my second story, I talked about an individual submitting whatever information he or she wanted to submit to a life insurer, which would come back with some sort of quote for life insurance. I do not think insurers can yet provide that type of service to everyday applicants. There is insufficient experience data to put a mortality value on each item that an applicant might provide.

Another problem would be designing a software program that could produce premiums on the fly—essentially actuarial pricing on the fly—based on the information provided by the applicant. It may be possible to create such a program today, but in my experience, nothing like that exists. Finally, a fully flexible application process would likely be very complex for the applicant; too complex, I expect.

Take a look at Chart 1. It shows a series of circles plotted on two axes, premium and underwriting, and labeled 1, 2, 3A, 3B, 4A, and 4B. Think of them as the underwriting combinations I have described. Number one is obviously the combination that requires the least underwriting. It is also the combination that is highest on the premium rate scale. We progress down the series by way of the arrows to other combinations. I will not try to explain what that means at this point,

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but keep this picture in mind as I talk about meaningfully different underwriting/premium combinations.

Perhaps the greatest challenge to developing an applicant-driven underwriting approach is defining a set of meaningfully different premium/combinations. Both sides of this phrase, underwriting and premium, have to be addressed. Assume that we are going to put together a series of premiums linked as in the chart. You will notice that on a horizontal axis, the different combinations are equally spaced. One of the goals in designing meaningfully different underwriting/premium combinations is to create appropriate differences in price. The underwriting difference between two combinations with essentially the same premium may not be meaningful to an applicant. In designing these combinations, large-dollar differences between the various combinations should be avoided. To produce these nicely spaced premiums, we obviously must put together sufficiently different combinations of underwriting requirements.

I would expect the number and range of combinations offered to vary by market. Remember, these combinations must be logically connected by underwriting arrangements and distribution channel. A market in which some individuals will tolerate an extensive amount of underwriting will probably allow a larger number and a broader range of combinations.

Creating combinations of underwriting requirements for these classes places new types of restraints on the underwriting process. For example, suppose that the target market is perceived to be sensitive to disclosure of genetically-based information, but that genetically-based information is selected as one of the criteria for distinguishing combinations. This could affect the design of underwriting/premium combinations in two ways.

The first way would be to distinguish between two otherwise similar combinations by having one use family history, responses to questions about genetically determined conditions, and allowable genetic tests, while the other similar class does not include any of these items.

The second way would be to distinguish among a series of combinations by having one combination ask for information about family history, the second ask questions about genetically-determined conditions and the third require allowed genetically-based tests. This is an illustration. I realize genetic testing is a controversial and evolving issue. As you can see, this approach may require underwriting principles to be put together in new combinations.

The simplest presentation of the various underwriting and premium combinations would be a display of all the combinations at once. The applicant could evaluate and select the most appealing, and the application process could go on from there. I do not think that is a good idea. The issues in comparing several underwriting/premium combinations would be too complicated for a simultaneous presentation.

There are other problems. For example, the premiums offered in the combinations are likely to be potential premiums, not actual premiums to be charged. They are subject to adjustment based on underwriting results. Finally, I think that presenting many premium and underwriting combinations at the same time would produce relationships between those combinations too difficult for the actuary to price. The most complex issues would be the relationship between the combinations and the way the applicant would select a particular combination.

To organize these underwriting/premium combinations, I propose a ratcheting mechanism. Think of underwriting/premium combinations as beads on a string. You can move from one to another along the string only in sequence. The sequencing itself suggests two rules. Rule one is that underwriting requirements for moving from one underwriting/premium combination to the next are cumulative, and that premiums always decrease as additional requirements are met. Rule two is that once underwriting for a given premium rate is satisfied—and this is probably the more important of the two rules—additional information made available in an attempt to qualify for a lower rate will not jeopardize the rate already attained.

In other words, if an applicant has satisfied the requirements for a given underwriting/premium combination and he or she is willing to submit to the underwriting necessary to move to the next combination, we cannot allow the additional underwriting information presented by the applicant to produce a premium rate higher than the premium for the class that has already been attained. Otherwise, there is a risk to the individual in providing the additional underwriting information. The risk being that, in providing the additional information, the applicant may end up with an underwritten premium greater than the premium for the class they've already attained.

This rule significantly complicates pricing, but it is very comforting to applicants. It means that if they qualify for the premium associated with some level of underwriting, they do not jeopardize that qualification by providing underwriting information necessary to qualify for the next lower premium. This rule could come into play in perfectly legitimate ways. For example, when a blood test reveals a serious condition that the applicant did not know about and did not disclose in answering questions associated with the prior underwriting/premium combination, the rule prevents the insurer from charging a rate of premium greater than the premium for the combination for which the applicant had already qualified.

Let me stop at this point. Is this ratcheting mechanism clear?

**MR. MICHAEL RICH:** You started out under the presumption that people are not avoiding underwriting refinement because they are playing some sort of game. You started out on the premise that they are afraid of needles, they are concerned about privacy, and there are certain things they do not want to disclose.

**MR. COOK:** Right.

**MR. RICH:** Okay. So you can argue the point that this is not just a big game that they are playing. It seems like rule two runs directly in the face of that. If they are afraid of needles, they are afraid of needles. It is not like they are qualified without a blood test. Now, all of a sudden I am not afraid of needles, and if you get something bad on it, so what? I have a problem making the connection, because back in the beginning, you started out under the premise that there is not a game going on. Rule two basically creates that game and creates the rules of the game. Maybe it is just me.

**FROM THE FLOOR:** If you have 100 lives and you charge \$1 per 1000, and then you get an additional piece of information, you can't just charge \$0.70 cents per 1000 on 80 lives.

**MR. COOK:** We are going to get to a numerical example, and you will see what happens to the mortality in a class when you allow the ratchet rule to function.

**FROM THE FLOOR:** Do you agree that overall, the overall price of the entire group would be greater than it would be if you weren't using the ratchet rule?

**MR. COOK:** If you use the ratcheting rule, the premium for each group, except for the most select, will be higher than what I will later call "the underwritten premium" for that group.

**FROM THE FLOOR:** The overall premium will be greater due to antiselection. It is as pure as you can possibly create.

**MR. COOK:** That is right. I agree. Now, back to the chart (Chart 1). Think of this chart as what a sequence of combinations might look like graphically. In this sequence, there are four basic combinations, with the third and fourth combinations bisected by some key characteristics such as tobacco use. Perhaps combination one is guaranteed issue. Underwriting for combination two might be a short application with a Medical Information Bureau (MIB) inquiry. Combination three might be paramedical. And combination four, from an underwriting standpoint, might be anything goes. These combinations of underwriting requirements are traditional. Although I think actual applicant-directed underwriting requirements will have to be put together in new ways, they illustrate the progressive nature of the underwriting process.

Combination one does not have to be guaranteed issue. Also, you might allow applicants who have a higher apparent tolerance for underwriting to enter at a higher combination. The risk, however, is that the associated underwriting will be too extensive and the applicant will be at risk of dropping out of the process, just as with the usual approach today. Some markets and channels will probably not tolerate four combinations. Perhaps some would tolerate more.

From a pricing perspective, actuaries will need to produce full sets of premiums or cost-of-insurance rates for each combination. Higher risk and maximum premium

limitations might come into play for the extreme combinations. The combinations will have different lapse rates, average sizes, modal distributions, and other characteristics.

If this approach were to be presented in a series of computer screens, what would they look like? Let's assume that an applicant is trying to qualify for the first combination. Applicant information is collected, and if this is a guaranteed issue or near-guaranteed issue combination, the applicant is now in the process. In other words, a policy can be issued.

Then a decision needs to be made, and the way it is presented here is:

"Congratulations, you have qualified for the amount of insurance you asked for at a coverage premium of, say, \$1,000. Then the applicant is told: "You may qualify for a lower premium if you provide certain information—another unit of underwriting data. If you want to do so, information about those requirements will be provided. If you do not want to submit to such questions, then you are ready to be issued."

The applicant might also be shown the lowest premium for which he or she might reasonably qualify, not as a tease, but as an example of how the premium for which the applicant has qualified compares to the premium that might be attained with enough underwriting. If the applicant chooses to go further, then he or she provides that additional unit of underwriting data. This process can continue until the applicant has gone as far into the process as he or she is willing to go.

When additional units of underwriting include paramedical or medical tests or other time-consuming underwriting requirements, this process probably cannot be completed in one sitting. The number of medical or other time-consuming filters is probably limited by the amount of time the application process can be allowed to take. One such filter may be the maximum number that you can reasonably incorporate.

There are some characteristics of the underwriting/premium combinations that you can anticipate. One is that, except for applicants who do not qualify for the entry class, there are no declines. All applicants can be issued in some class—whichever class they choose. Also, each class, except for the most select, actually contains three groups of individuals: individuals who would qualify for a more select class if they submitted the underwriting requirements, individuals who satisfy the requirements of the class they're in, and those who would be in a lower class without the ratchet rule. This latter group includes those who are determined to be so substandard that the correct premium would be higher than that for the class they have already attained.

Finally, there is the top class, the class that an applicant can attain only by satisfying the underwriting requirements. That class should have mortality experience and, therefore, premiums that are equivalent to those for similarly underwritten conventional classes. However, this class will have fewer people in it if some applicants are satisfied with a less underwritten combination along the way. It



may be a smaller class than it otherwise would be.

I understand in making this presentation that there are a lot of questions. It would be difficult to implement this type of process, and we do not know all the transition matrix numbers as people move from class to class. The point of the presentation is to try to introduce a process that is friendlier to applicants.

Applicants for life insurance do not really like the usual underwriting process. Even 20 years into a life insurance career, when I apply for life insurance, I still fill in all the information, submit to the tests, cross my fingers, and send the information off to a big impersonal insurance company. I hope that they come back with the answer I want, and I really hope they do not come back with some unwelcome information. It is not a process that applicants enjoy.

Here is the numerical example. In the example, I have six groups of people: issue age 25, 45, and 65, males and females; three classes: entry, standard, and select; and three sets of underwriting criteria, one for each class. Each level of underwriting rejects a portion of the applicants who elect to undergo the underwriting required to move to the next lower-premium class. Rejection and election rates are assumed not to vary by age or sex. An election rate is a rate at which applicants that have qualified for one underwriting/premium class elect to submit to the underwriting requirements to progress to the next-lower premium or better class, depending on how you prefer to describe it. Rejection rates are the rates at which the underwriting in that process reject some of the individuals trying to move to the better class.

To simplify the mathematics for this example, I have made two simplifying assumptions. One is that applicants electing to move up in class are not self-selecting. That is a pretty big assumption, and probably not entirely realistic. The second assumption is that the expected mortality rates for individuals who submit to underwriting in an attempt to move up to the next better class and are rejected do not lower the expected mortality for the class in which they remain. Again, that is probably an optimistic assumption. If you consider them carefully, both assumptions probably produce class mortality estimates that are too low.

As you can see (Table 1), the select class, Class 3, is not really very select, but the mortality rates themselves are not important to the example; they are just numbers. For this example, we do not need an election rate for Class 1. Put another way, we do not need to know what portion of the applicants do not meet the requirements of Class 1. It is simply the universe of applicants who are going to go through this process.

Table 1

### Example (cont.)

Assumptions

	<u>Class 1</u>	<u>Class 2</u>	<u>Class 3</u>
Mort % of 75-80 S&U (FY)	180%	144%	108%
Election rate		80%	75%
Rejection rate		15%	30%
Underwritten mortality	.00312	.00249	.00187
Class mortality	.00444	.00318	.00187

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The underwritten mortality rate is the expected mortality rate based on underwriting requirements for each class. Class mortality, which is probably better described as actual mortality, is higher than underwritten mortality, because some of the best risks in each class elect to move up. Underwritten and class mortality are the same for Class 3, because the only way to attain Class 3 is by submitting to the underwriting for that class.

Look at the results. By coincidence, the three classes shown in the pie charts (Chart 2) end up being similar in size. Each of the classes is made up of two populations. One includes people who got there by being underwritten for the class. That is the blue part of each pie. The others, the orange part, are those applicants who were rejected when they tried to attain the next class. Class 3, of course, consists entirely of people who have been underwritten for that class, so it's all blue. The colors in the column charts correspond to the pie charts. They show underwritten mortality rates in blue, rejected elector mortality in orange, and combined mortality rates in yellow for each of the classes. It should be clear that if these were strictly underwritten classes and there was no ratchet rule in place, we would not have rejected electors affecting the class or underwritten mortality. By chance, the assumptions in the first part of this example produce classes that are about the same size. The green bar shows that of 100 applicants who meet the requirements of Class 1, 32 end up in Class 1, 32 in Class 2, and 36 in Class 3.

I want to continue with this example by making a change and showing you what happens (Table 2). You will see that I have reduced the Class 2 election rate from

80 percent to 50 percent and the Class 3 election rate from 75 percent to 25 percent. In other words, I have reduced the percentage of applicants electing to attempt to move up in class. This change also affects the expected class or actual mortality.

Table 2

### Example (cont.)

Assumptions

	<u>Class 1</u>	<u>Class 2</u>	<u>Class 3</u>
Mort % of 75-80 S&U (FY)	180%	144%	108%
Election rate		50%	25%
Rejection rate		15%	30%
Underwritten mortality	.00312	.00249	.00187
Class mortality	.0358	.00263	.00187

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Look at the pie charts first (Chart 3). Because I have reduced the election rates, more of each class is made up of people underwritten for that class, and fewer electors are trying to move up to the next class. You can also see the natural consequence in the column charts is that combined mortality is much more similar to the underwritten mortality than in the first example. There are fewer rejected electors. Again for Class 3, which is fully underwritten, the underwritten and class or actual mortality are the same. The consequence of making these changes—remember, the election rates have been reduced—is that the more select classes are smaller. Fewer people move through the chain of underwriting.

The simple examples here required a fair amount of work with mortality rates to produce appropriate class rates for each class. And, of course, there are many subtle effects I did not try to take into consideration.

Let's move on to what I perceive to be the key actuarial challenges to making this process work. Defining the classes and the class relationships is a very complicated process. I believe it would be an iterative process between actuaries, marketers, and underwriters to produce meaningfully different classes, premiums that are different from each other, and to fit together underwriting requirements in appropriate ways.

It might very well be, when you think about the preferences of applicants or the things that they would be inclined to tell you, that you need to put together underwriting requirements in ways that do not exist today. Application, inspection, and medical-type information may also be captured in stages. We do not really know what election rates might be. Election rates can be very much influenced, I expect, by the way the process and the different underwriting/premium classes are presented. Mortality assumptions for the classes, other than the most select class, will depend on things like election rates and the rates of rejection of people who are trying to move up by submitting additional underwriting information.

You can get even more controversial, I guess. I'll say that there's no particular reason for some period after issue that you would want to prevent people from submitting to additional underwriting to move to a lower premium class after the policy is in force. I don't think you could extend that right very long. At least for a short period after issue, you could allow individuals, once they're paying the premiums and are perhaps more secure in this process if they weren't secure in the beginning, to provide that additional information and therefore move to a lower premium class.

I have said some unusual things in this presentation. However, the more I work with it, the more convinced I am that a process like this could actually be put together. The question is, is it worth it? Is it worth going to the actuarial trouble, the underwriting trouble, and the marketing trouble to put together a novel approach to underwriting individuals? With that I am going to stop, and try to answer your questions.

**FROM THE FLOOR:** I have a question about the comment that you made regarding the post issue to lower premium. You made the comment that you thought that should be a short-term capability, and I am wondering why 10 years after issue you would not allow somebody to go through additional underwriting and thereby lower the premium.

**MR. COOK:** I am not sure that I want them to do that. I am concerned about the changes that can occur in their needs or in their health situations that I cannot predict. That would make such an offering by an insurance company unwise. It may very well be, though, that if we get comfortable enough with this type of underwriting process, we'll decide that we can go there.

**MR. MICHAEL RICH:** As soon as you move out a couple of years and allow some person to move to the next class, the rates for people who are in the previous class are wrong, because you have not taken that new election/rejection rate into consideration unless you load enough. The main problem is your guaranteed issue \$1,000. That basically has a residual built in it, too, and is going to be a higher rate than the guaranteed issue offered by Company XYZ down the street. That is kind of the basic premise.

**MR. COOK:** There are some operational issues that complicate it too.

**FROM THE FLOOR:** I can understand that there may be issues that would have to be dealt with, but you have to remember that you had offered this person the opportunity to underwrite further to begin with. Just because that person does not initially take that opportunity, I don't see a reason not to continue to offer that possibility going indefinitely into the future, particularly because anything that a person would submit that does not provide good information will prevent their premium from being adjusted. You have to think of the fact that any information that they submit later on to show that they are a better risk clearly means that you collected a higher premium than you needed to from that person for the ten years that they refused to go for additional underwriting. I personally do not see why you would want to limit the time period.

**MR. COOK:** You may be right.

**FROM THE FLOOR:** I just want to make a general comment. I find this very interesting. There are always battles that we fight with the marketing department and the underwriting department regarding these issues. I think the attempt here to make the degree of underwriting a choice is actually quite good. Again, there are a host of problems, I am sure, from a pricing point of view and from a risk point of view, because of lack of information. Any company taking this will introduce itself to a risk based on the lack of available experience data. I think this whole concept is a very good one.

**MR. COOK:** I think an unfortunate result of a company implementing this type of approach would be finding that 95 percent of applicants blew through the whole thing to the most select class. All the trouble and all the actuarial effort and marketing would pretty well be for naught if that happened.

**MR. RICH:** I have two points. One, let me try to clarify this issue, because I think there was a basic premise that was missed. From a pure underwriting logic point of view, the issue is not whether you submit just a blood test ten years later and say, "Okay, now I want to move down an underwriting class." You first of all have to consider lowering the rate later on or else they'll just go elsewhere. I think the missing piece here is that you would basically have to start back at square one. In other words, you would start with the pieces they qualified for to begin with to see that they still qualify for that and then add the missing piece to it. I do not think you have much of a choice. If you did not do this, if different companies had this available, they would just go out there and qualify for lower rates.

The other piece, despite my first reaction on the anti-selection issue, is this is very interesting. It seems like the real issue that you would end up dealing with is how competitive the first layer of premiums were with what was going on in the streets. If the premium was four times what the individual could buy on the street, you would have to wonder, why in the world are they doing this, unless that person just has so many things to hide? It depends on how big a premium gap exists. Everything has a price. I think there is a price that people would be willing to pay for this. If they pay too much for it, you would have to really question their ulterior motives.

**MR. JOHN I. HOWARTH:** I would just like to piggyback on that same question. First, I would like to thank you for presenting this very interesting concept to a bunch of skeptics. I think it's a good intellectual exercise, and I appreciate your putting yourself out for us to throw darts at.

The second thing that stands out in my mind, and I am not sure that your premium examples are that crazy, is if somebody would pay \$1,000 for coverage for five years, 50 years, whatever, for a whole-life policy, compared to \$300, and you bait that person with these premiums where you say, "Okay, you qualify for \$1,000. You can drop down to \$600 if you do this." Then I think on your next chart you showed that the ultimate premium rate would be something like \$300. So that's \$700 a year not to get a needle stick once. That is so extreme in my mind that I think it probably would not be workable. People might give up \$50 a year for the rest of their life not to get needle stuck, but \$700 a year is off the chart, I think.

**MR. STEVEN E. KONNATH:** I am trying to help you out as a critic here again and I have a couple of comments. One is that you would not want to have a guaranteed issue class. I think you alluded to that earlier, that maybe the entry point into this is definitely up the screen there, and therefore the options after that are not that much different. It is just a matter of refining beyond that. You might be able to use some selection techniques on the front end, such that you are targeting different people who maybe as a whole have a slightly better than average experience than what the street offers. Therefore, the cascading effect going up might work as well.

The other option might be to have a product combination there that hedges against itself. Maybe you could combine benefits somehow with a product design that hedges the mortality risk and subset remains. I am just throwing out options there.

**MR. COOK:** It may be that the benefits are not exactly the same for each class. For example, you might offer the typical guaranteed issue structure in Class 1, in which you return premiums with an accidental death benefit layer for a couple of years. Also, it is very likely that you would be willing to offer larger amounts for the better classes than for the first class. So, there may be some other ways to encourage people to move through the process besides a willingness to allow themselves to be underwritten.

I also want to respond to one of the other questions. Why would a person want to go through this process? Why would a person want to pay a higher premium than he or she could if that person submitted to a conventional underwriting process? That is the key question. Do we really value things such as convenience and simplicity and lack of intrusion enough to pay for them? We give a lot of lip service as a society to the value of privacy, but we do not often have to put a dollar value to it. It is not clear to me that privacy is as valuable as people profess it to be.

**FROM THE FLOOR:** I have a couple of comments. One, there are definitely a lot of people overpaying for insurance. So the question is what kind of market would you envision for this type of underwriting? The second question is about the face

amounts. There is more than one way for them to select and what happens to the selection at the face amount at which point the process is going to be frozen? How do you envision the choice of the face amount?

**MR. COOK:** This is how I envision this process: The face amount would be chosen in the beginning and would remain a fixed number through the process. That has implications, particularly for the Class 1. If you are not willing to offer large enough face amounts in Class 1, then at some point during the process, you have to allow the face amount to move up. If the face amount applied for is large enough, one way to work this process is to allow the individual to skip the Class 1 and to move to a class in which that person is willing to provide that face amount.

One of the problems with that, though, is that he is going to be introduced to a class with a premium that is based on people that are underwritten for that class, plus some people that are rejected for the next class. It just might be too expensive to write really large face amounts for this type of process.

It might very well be that, in the fairly crude way I presented it, it would be best for situations like work sites, or a kiosk in a bank, or perhaps strictly for smaller size on an Internet sale. There is no particular reason why an agent with a laptop cannot also present this process.

**FROM THE FLOOR:** So the face amount may be an issue for the agent?

**MR. COOK:** Absolutely. Those are the markets that seem to me to be the most compatible, at least initially and with this sort of crude presentation.

**MR. JACK GREENBERG:** I have a question on the distribution in which this type of product is sold. If it is to be sold in an agent's environment, I can see what kind of market conduct issues are involved, especially because the higher the premiums are, the more commissions that would be paid to the agent. Just from my own experience with agents, the least amount of underwriting they can encounter is clearly the best and easiest and less risky from their perspective. Do you have any comments about that market conduct issue?

**MR. COOK:** I thought about that, and while I do not think this process is designed for an agent's presentation, if you can get around those market conduct issues you talked about, and perhaps you can, there is no reason in theory that it could not be employed by an agent distribution system. Even so, it may not be practical at this point.

**FROM THE FLOOR:** It just occurred to me that you say level of compensation for the underwriting classes. It might be entirely legitimate to have lower compensation for less underwriting, and it will give you some more mortality margin to work with. I know that underwriting tends to pay for itself, but you still may get some margin out of the underwriting savings that you can throw into the mortality bucket. I did some electronic issues that have an amount of questions and so forth, and we could

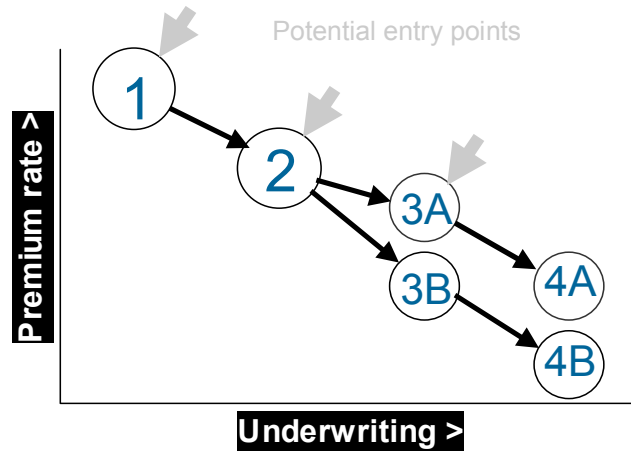
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take 50 percent higher mortality and do just fine with smaller face amounts, because the administrative costs were absurd at small amounts.



Chart 1

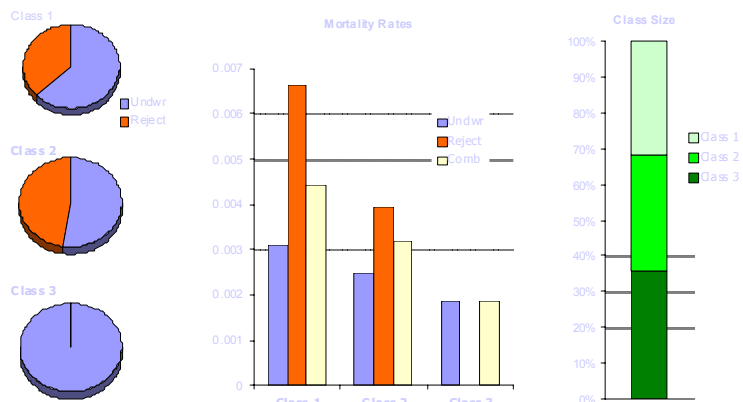
### Combination progression



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Chart 2

### Example (cont.)



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Chart 3

### Revised example (cont.)

