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Setting Mortality Assumptions Using Population Mortality

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Summary: The actuary working in product design for countries without insured-lives mortality tables often uses population mortality tables. This session analyzes the factors that influence the mortality differences between countries and between population and insured-lives mortality.

Mr. Paul F. Turner: I'm second vice president for Lincoln National Corporation. I'm currently working in Mexico City for Lincoln National's joint venture insurance company as director of technical and financial.

It is my pleasure to introduce Jess Mast, who is second vice president and director of risk management research of Lincoln National Reinsurance Companies. He directs research activities for underwriting, product development, and pricing. With over 30 years of experience with Lincoln National, Jess is author of innumerable articles and is very active in several underwriter organizations.

We decided to interpret "interview format" as follows: Jess will help orient us to the subject of setting mortality and morbidity assumptions when limited insured-lives data exist or the data are unavailable. Then, there will be the opportunity to ask Jess questions on the material covered.

Mr. Jess L. Mast: There are many things to consider when using population data to set mortality assumptions: (1) potential sources of data; (2) products to offer in that

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market; (3) markets to target; (4) an underwriting profile; (5) risk classification issues; (6) comparability of the target market with surrogate data; and (7) extrapolation of surrogate data to a target market.

To locate sources of data, you will have to mine for them. You must focus on which data are most comparable to the market for which you're trying to estimate mortality. Population and demographic studies, while potentially excellent sources, represent unfiltered data. The World Health Organization (WHO) and United Nations (UN) data are unfiltered, too.

Data from consultants and reinsurers may be filtered and tailored to your target markets. In general, data from the Internet and government statistical bureaus are unfiltered. Some data, particularly from developing countries, may be highly questionable. Even data on developed countries can present challenges in deciding their validity and acceptability or applicability to target markets.

Data on insured lives may be available through industry associations and intracompany or intercompany studies. It's necessary, though, to find out what's been collected and summarized. This step can be considered as part of the due diligence process needed to establish prudent mortality assumptions and supportive risk management processes. The insured or population data may be used. We need to determine, though, which mortality tables are used, how they're constructed, what they represent, and how they are adjusted for contemporaneous expectations. Data by cause of death are useful in making comparisons between population and insured-lives data.

Cause of death information can be misleading, however. For example, 10 or 15 years ago, I was looking at death claims from Colombia. One of the causes of death was strange. Although the cause of death was identified as anemia, the person had been stabbed and had bled to death. Such data are helpful in identifying the areas on which the underwriting process should focus.

Trends in mortality mainly deal with changes in cause of death and all-cause mortality. These trends require study and understanding before deciding how these data should be applied. Also, review how underwriting requirements and standards have changed since the period of time covered by the study of insured lives. The key is to understand the data, the methodologies used to collect and compile the data, and the strengths and limitations of the data.

Epidemiologic and other health studies may help determine which characteristics are important to measure and to understand their significance for underwriting. The data need to be country- and market-specific, at least to the extent that may be

practical. The data need to be managed in such a way that you can actually apply them to a particular market that you have in mind.

Although surveillance of competitors' practices may be taboo in this country because of antitrust concerns, it is probably feasible outside this country. You want to learn more about what your competitors may be doing in underwriting practices, products, premiums, compensation structure, and so on. This is valuable information if you are attempting to do business in a different or new target market.

Extrapolating data and the relationships derived from U.S. experience can help fill in the gaps. For example, the value of underwriting requirements and tests used in this country are studied periodically. Some of the results may also, in fact, be extrapolated to other countries.

Cause-of-death analysis can be helpful in determining which underwriting requirements will be the most protective. It should be noted, however, that the accuracy and usefulness of cause-of-death information can vary dramatically from country to country, as well as within certain countries.

All studies and data have limitations. I'm reminded of a comment I made to the underwriters a couple of weeks ago: all data are dirty, to some extent. There are problems with any data you have to deal with. You just need to understand what they are so you can deal with the information effectively.

For example, technical notes for studies may be vague or incomplete, so you'll have to distinguish between what's known and unknown from such tables or studies. The completeness and credibility of data may vary and affect trends over time. Such trends actually may reflect spurious changes due to increased or improved completeness of data collected over time. While it also improves their credibility, it makes it tougher to distinguish the true underlying trends over time. The strengths of data also must be understood and exploited, while continuing to recognize their limitations.

The nature and quality of data available may influence decisions about which products to offer. Clearly, too, the choice of products to offer will determine which data are needed and how to interpret them. Examples include: (1) the accidental death rider, (2) the critical illness rider, (3) the disability income rider, and (4) term products versus savings-oriented products. For example, people in Asia don't like to talk about death, so a term product may not sell very well there. Examples of corresponding application forms may help to identify the questions that are practical to include on application forms.

Another major consideration is to develop an underwriting profile. Determine the profile being used in the target market, such as the underwriting manual and the requirements used, the application questions, and any special forms that may be used. The experiences of the home office and field underwriters can vary greatly among and within companies. Developing an underwriting profile will depend on which underwriting requirements are available and their value.

For example, the following are very important: which tests are available, their costs and quality, the ease of access to physician and hospital reports, and the setting of age and amount limits for routinely requiring certain underwriting requirements. This is an important question: Will the focus be on current-only health status? This may be necessary if medical histories cannot be clarified through the local medical and healthcare providers.

Here are two examples of receiving current-only status from health-care workers: (1) no irregularities were noted, and (2) patients in good health and did not suffer from any infectious diseases. Neither is helpful in the underwriting process.

Legal and cultural issues may determine what to use. For example, are people honest in answering questions on their application form? Does the country's legal system favor the policyholder or the company? Establish an underwriting philosophy that assesses risk as consistently and effectively as practical. Establish a claims management philosophy about the period in which a claim can be contested and the administration of claims. Some challenges will include an accidental death benefit, a disability income rider, and a critical illness rider. Consider a preexisting condition exclusion to minimize the potential impact of antiselection, particularly in markets where information from hospitals and healthcare workers may be compromised or quite meager. A fundamental objective of underwriting is to minimize antiselection and fraud. Financial underwriting, for example, does help minimize the incidence of antiselection.

The underwriting profile should reflect the target market and distribution system to be used. The profile also will reflect the cost effectiveness of the underwriting process. Some tests, however, may be very expensive—almost prohibitive perhaps for use—yet can be cost effective. You may find that many of those tests are cost effective on large cases or in situations where you cannot determine whether to insure an individual. In these circumstances, the test is needed to qualify the individual for any coverage.

Some common variables used to price products include distinguishing (1) males from females; (2) nonsmokers from smokers; (3) preferred from standard risk (rarely used outside of North America); and (4) standard from substandard risk.

To the extent that any of these variables have not been used to price products, they may be used in the risk classification process. For example, if nonsmokers are not priced using nonsmoker rates, then the underwriter and actuary may together choose to allow an age setback for the nonsmoker, or to allow credits against debits that would otherwise apply for unfavorable risk factors.

Qualification criteria must be established for distinguishing a standard from other risk. Choosing select and ultimate versus aggregate mortality in pricing recognizes the favorable impact of the underwriting profile, which gradually decreases over time. Because the use of underwriting requirements generally varies by age and becomes more protective as age increases, the relationship between select and ultimate mortality tends to sharpen with advance in age.

Group mortality reflects risk among individuals who are actively at work on a full-time basis. Information about group mortality, therefore, can be compared with individually underwritten lives mortality and population mortality. The underwriting manuals that are available may apply to cultures and underwriting processes quite different from the target market. Modifications, therefore, may be necessary to improve the manual's applicability to your target. The underwriting philosophy to use is chosen for consistency in decisions that support the financial objectives built into the products.

The considerations discussed so far must be judged according to their comparability with surrogate data. How comparable are surrogate data to a target? How reflective is the surrogate data of the underwriting involved? Consult with your reinsurance partner and invite responses to such questions. Depending on who is attempting to deliver a product to a new market, local entrants can consult with reinsurers and consultants. Foreign companies can consult with local companies, consultants, and reinsurers. Foreign reinsurers can partner with local reinsurers or companies. Almost any combination of those possibilities is probably workable, as long as each contributes unique knowledge and expertise or other resources to facilitate the successful entrance into a new market.

The actuary, underwriter, and other risk managers should collaborate in determining which data to use and how to apply them to the target market. To extrapolate from surrogate data, identify the country and market that are most similar to the target and that have useful data. Hopefully, a country and market can be located. Extrapolate data from the country and market to the target. For example, examine ratios of insured-to-population mortality in the country and market used as a surrogate; apply ratios, as feasible, to that target; reflect the "ability-to-underwrite" factors when the surrogate and target markets differ.

If a factor could not be underwritten, then it may need to be recognized more implicitly in the pricing. Socioeconomic factors can vary between the surrogate and the target market.

Claims philosophy and claims management capabilities need to be recognized. The use and abuse of alcohol, tobacco, and other drugs may be recognized for their varying prevalence in the target market versus the bases that were actually used to derive the surrogate data.

Some regulatory and consumer issues include limitations on which questions you can ask. The U.S. and, I think, parts of Europe may not allow questioning about HIV test results. Limitations on the use of answers, such as information about genetic testing, may be challenging. That's more of a prospective problem than a current problem; we don't see very much information from genetic tests so far. You know, however, which way the political climate is inclined—against the industry being able to use this information.

There are limitations on underwriting tools to use such as requesting a genetic test. There are limitations on the contestable period. There may be a two-, three-, five-year, or, perhaps, no time limit. These limitations may apply more to the U.S. and Europe than to other parts of the world.

Public health and safety considerations, such as sanitation, quality of water, pollution, public safety, and law enforcement may require special recognition, when they are extrapolated to the target. Additional considerations include access to medical care and its timeliness, quality of health care, and community versus individual health care. If the health care available within the community is not very good, an individual who can afford to do so probably has access to the best medical care in that part of the world. There's a big difference between the community and the individual health care that may be available. Diet and nutrition are additional considerations.

Infectious diseases and viruses are becoming more dangerous. We need to identify which diseases are common or peculiar to the particular target. It is also necessary to estimate the incidence and prevalence of main diseases and illnesses in the target versus the baseline that was used for surrogate data. Natural disasters contribute to adverse fluctuations in mortality, as do wars and epidemics.

We've discussed some things to consider. Here are some other things that might help. A good place to start is to first draw parallels between population and insured-lives data. It's imperative to recognize the interdependence between

underwriting and mortality. Also, involve consultants and your reinsurers in a partnership.

I suggest you try to develop a holistic perspective based on actuarial, medical, underwriting, demographic, anthropologic, and epidemiologic viewpoints. These touch all the areas that have some impact on your eventual mortality and your ability to evaluate what mortality to anticipate.

I believe that you should plan to monitor experience by designing and developing systems that are able to track and understand experience as it emerges, to reset pricing and underwriting accordingly, and to update expectations. Let's open it up for questions and more discussion.

Mr. James W. Pilgrim: Jess, I'll ask you a typical actuarial question. You're the actuary at Lincoln National and you're going to expand your reinsurance operation into India, where there's some current opportunities, and you've been asked to determine what you're going to use for mortality in India. How would you start?

Mr. Mast: First of all, you have to determine what areas of India and what kind of a target market you have in mind. Let's say your target market is India's upper socioeconomic class. You may have difficulty selling term products because they may not appreciate the idea of the agent—or anyone—discussing death with them. Consider the savings kind of products which may be more acceptable and are apt to sell better.

Otherwise, you will find mortality data and other population data on incidence, prevalence of various diseases, and so on, that pertain to a country or region geographically close to India—unless you can find these data about India. I don't know whether there are such data on India. Because the prevalence of diabetes is much higher in India than it is in this country, there should be some kind of testing for glucose or hemoglobin A1C. It depends, too, on what other companies are doing in that area.

The place to start is to look at what other companies are actually doing—what kind of products they're offering, what they're doing in underwriting, what kind of application forms they're using, and so on—so that you get a sense of what currently is happening in that particular market. After you look at whatever data are available, you will be in a better position to decide how you want to compete. You may compete by being very selective in the market that you choose to pursue. You may pursue a part of the market, for example, that's being overpriced by competitors. By using selective pricing and target marketing, you might be able to pick a very profitable segment of the population.

Mr. Patrick Kelleher: How would you deal with the situation that is occurring in some small, rapidly developing countries in southeast Asia in which the factors that influence mortality are changing very rapidly? How would you assess reasonable mortality expectations for an insured population in that area of the world? In particular, what factors would you carefully consider when you are trying to make the assessment?

Mr. Mast: That's another very good question. Of course, in that part of the world, the prevalence of HIV infection is growing very rapidly—this calls for the need for some kind of testing. Otherwise, you may not be able to offer coverage on a very affordable basis. I understand, for example, that of the military recruits in Thailand, roughly 20% or more are testing positive for HIV. It's much more of a problem there than it is in this country.

You need to look at the kinds of products offered there and the nature of the underwriting occurring. Depending on the nature of underwriting that you're using, your mortality expectations can vary considerably. I don't want to separate those two issues because they're so mutually interdependent. Whatever you decide to do from a risk classification and underwriting requirement standpoint will very much affect your eventual mortality assumption, especially a reduction from population mortality.

If the pricing information is available on products currently used in that market, you might start out by offering something comparable or trying to be more selective in the quality of risk that you would be writing. By doing so, you can more or less guarantee yourself a profit on the business that you choose to write.

As you may have been doing business for a while in that country, you may learn more about the nature of the applications that you're seeing and the quality of the business that you end up placing. For example, what kind of challenges do you see from both an underwriting-classification perspective as well as from a claims-administration viewpoint? Your question was, How do you establish a mortality assumption? I think whatever you do, it's going to reflect a mix of all those different factors, to result in or help you estimate a mortality assumption to use for that particular market. Again, use whatever you can as a surrogate to come close to what you might expect in that area.

Mr. Turner: I've been able to see pricing products from both the reinsurance perspective—having worked at Lincoln Reinsurance for five years—and from the direct-company standpoint in foreign markets, now that I'm with the Lincoln Company in Mexico. From a direct company standpoint, you have the luxury of being able to count on your reinsurer for support. This is not a pitch for Lincoln—it

could be for any reinsurer—but I know from working in a direct company, there's much confidence that you can gain from depending on a reinsurer's perspective as well as the financial support of your products. Consultants could also have the same perspective because they work with the market and many companies there. There's a lot of experience.

When I was a reinsurer, I traveled to southeast Asia. I saw many puzzled reinsurers taking a British or American mortality table and trying to make adjustments to it based on, say, the primary five causes of death in that country and in the country where the table was developed. Although there are other causes of death, the five primary causes represent a significant percentage of the total. You'd be surprised how important those five are.

By making the proper adjustments for culture, diet, body build, and all those kinds of things, you can achieve a level of mortality that has some science behind it. I found in southeast Asia that the general direct market was not as competitive as it might be in the U.S. or Canada. Because of that, direct companies were able to work reinsurance on the one hand and their direct prices on the other hand.

Mr. Randy E. Tillis: From the valuation side, let's say I have a block of single-premium immediate annuities (SPIAs) or some other policies, and I'm trying to set up an annuity in another country. What are you seeing there? How can you extract from deaths on the insured populations? What would you suggest?

Mr. Mast: For example, you may be able to extrapolate slightly at least from the relationship between annuitant mortality versus, say, individually underwritten lives mortality in this country and apply that. If you get a good surrogate for mortality to expect on individually underwritten lives, whatever that relationship may be in this country may also apply in that country. It's a matter of exploiting whatever resources are available and trying to extrapolate from the relationships of various segments of data and products in this country.

You don't know for sure how much they're going to apply in those other countries. I don't know, for example, if you're dealing in some parts of Asia where products are not sold as death benefits. Instead, they're sold more as savings products. The differential you may expect to see between the annuity-oriented versus the savings-oriented products may not be as great as we expect to see in this country.

Ms. Faye Albert: I was interested in the comments that you had about HIV in southeast Asia. Do you have any experience in knowing what the difference in mortality was due to AIDS? I know that has never been a big factor in mortality here.

Mr. Mast: I mentioned earlier that in Thailand, a very high percentage of young men who are between 17 to 19 years of age and are applying for military service are testing positive for HIV infection. Compared to the U.S., and, perhaps, parts of Europe, the stage of the epidemic in that part of the world is relatively young. We may not have seen very many deaths so far that could be attributed to AIDS. Of course, just trying to identify AIDS-related deaths is a very difficult job. One of the medical directors I worked with for many years, Bob Pokorski, developed a manual that was used to help claims people determine whether a claim was AIDS-related. It's a very complex process.

I would imagine in less developed countries, where recognition of certain medical problems may be less keen, you may not really get the documentation on death rates or causes of death to illustrate the full impact of that problem in that part of the world.

Ms. Kristen C. dos Santos: If you were going to reinsure accidental death benefits on some of these life policies in these international markets, what sort of factors would you consider to distinguish one country from another when usually most of these underwriting considerations aren't as applicable with accidental death?

Mr. Mast: Some of the factors that we consider when deciding whether an applicant is a standard risk in this country are also helpful in identifying lifestyle problems that can mess up the accidental death risk. Examples include cocaine screening and even cotinine screening, where you're segregating smokers from nonsmokers. One of the reasons that smokers' mortality is so much higher than nonsmokers' mortality is the lifestyle or accidental death/violent death-risk component. Some other things to consider may be the effectiveness of your exclusion provisions for distinguishing, for example, people who may be driving a car away from the scene of a crime and getting killed. Those aren't accidental deaths, necessarily. They would not be considered as such in this country, yet they can appear to be "accidents." Those situations may be difficult to manage or at least to identify—perhaps more difficult to identify than such deaths in this country.

Paul told me about a quote he dealt with in Hong Kong, where the accidental death risk is very much different from what it is in this country. The risk is much lower than we would expect to see in this country, and he speculated on some of the reasons why. For example, maybe fewer people are able to drive cars great distances or fast enough to be in a kind of an accident that would take their life. You might see a large number of fender-benders.

Mr. Turner: It's too expensive to own a car.

Mr. Mast: Conditions of roads, maybe the use of firearms, and the risk of terrorism, regional wars, or conflicts also may play a role in how you decide to price a product, because those hazards are atypical of what we ordinarily would see in this country.

Mr. Turner: Another key for our accidental death insurance is the interest in many of the Far East countries, what I'll call speculation, in that the accidental death benefits are far out of proportion to what you might find on the all-cause death benefits. That's something that we as a reinsurer have to face because a lot of those end up on our desks to underwrite. You have to draw strong lines somewhere between just serving the client, in the sense of taking whatever they throw at you, and protecting yourself from that kind of speculation. I know that we do various kinds of financial underwriting on such applications, but my experience or expertise ends with that comment.

From the Floor: What would you do in a country like Mexico, where insurance companies are going to be able to pay pensions and receive single premiums, where the problem is mortality improvement because of improvements in the social conditions?

Mr. Mast: I don't know much about the pension market. It sounds like the typical buyer may be upscale or more of a carriage-trade market. I'm not sure about that.

Mr. Turner: I'll just set the stage for that question. Mexico is going down the path of some other countries in Latin America—namely, Chile and Argentina—where the entire population will be converting from a government social security system, like we have here in the U.S., to an individual account approach that Chile and Argentina have followed.

Many people are coming into lump sums of money. In the short term, people are converting over from the current system. In the long term, people have saved money in their individual accounts and will be looking for a way to invest that money upon retirement to fund their retirement. These people will be looking at various insurance companies to provide them with these annuitant benefits.

We've been talking about this in our company as well. I know that Nacional Provincial just found a partner from Chile that has some experience to help them in this market. Nacional Provincial, I think, if not the largest company in Chile, is certainly in the top two to three. What you need in the Chilean market is some kind of mortality underwriting that asks people how healthy they are, and rates come down from there.

Mr. Mast: That's a good point. In Mexico a greater percentage of the population uses cigarettes as compared with this country. On the other hand, however, the mortality appears to be as favorable as it is in this country. Examining cause of death, for example, would help you to identify what aspects are really contributing more heavily to overall mortality than others. I don't know that you necessarily do much underwriting. You wouldn't have to do much underwriting, because most of the risks are self-selective. Otherwise, they wouldn't be purchasing that kind of plan if they didn't expect to live some time.

I don't know whether you would try to use some relationship between annuitant mortality and individually underwritten business mortality as an adjustment factor to mortality that you would use otherwise in that particular country. For example, to the extent you may be using the 1982–89 study as a composite study, it doesn't include the first three policy durations. It includes both individually and group underwritten insured lives. Of course, the rates are indistinguishable by underlying underwriting—it's all on attained age basis. If you look at the mortality rates at the older ages—starting about age 73 or 74 and up—the mortality looks extraordinarily favorable. I don't know whether there was some problem with the underlying data that were used to construct the table. I think the task force that developed that table was trying to determine what factors are truly involved in creating the anomalies that were seen at those older ages. I don't know whether they reconciled any of the explanations for it, other than maybe the paucity of data at those high ages.

If you were to compare those mortality rates with rates on insured lives in this country, I think you'd find they're very favorable. It may even be more optimistic on the side of prolongation than you might expect in the domestic market anyway.

Mr. Anthony W. Boston: If you are requesting information from a foreign country, do you need to request it from a technical person who speaks your language in order to avoid being misinterpreted? Do you think it's important?

Mr. Mast: Absolutely. I think you need a technical person with facility in the language in order to understand the technical notes and scientific material published in that foreign language. Otherwise, you run the risk that people are not going to understand and are going to use the wrong terminology. Furthermore, they may mislead us in the ways in which we may try to use that information.

Ms. Lori A. Grapentine: You mentioned that the Internet is a source of data. Do you know where we might go to get information?

Mr. Mast: I have access to a research librarian and I just ask her to do the searches for me. She did give me the Internet address <http://www.cdc.gov> that should be used for the World Wide Web.

Mr. Charles A. Von Fange: What is your opinion about the credibility and usefulness of the UN and WHO data? Could you comment about how the data are collected, and your feeling about the credibility of that data?

Mr. Mast: The credibility varies considerably from country to country. It depends on the data-collection techniques and the completeness of data collected within the particular country. It depends a great deal, too, on the geographic location within a particular country where the data are coming from. For example, Sao Paulo in Brazil has an outstanding data collection, with accurate information, and a large amount of information on the population's vital statistics. If you go out in the hinterland, the data deteriorate rapidly.

One of the resources I've enjoyed using over the years is Sam Preston. He's a demographer who published a book in 1972 called *Causes of Death: Life Tables for National Populations*. It was a milestone publication. He documented the methodologic problems associated with data from a variety of countries. It illustrated how he, Nathan Keyfitz, and Robert Schoen actually used that information and recognized those limitations. Hopefully, since the later 1960s and early 1970s or so, the data-collection techniques used by these countries have improved. Maybe the limitations observed then have largely disappeared, but I don't think so.

Mr. Michael F. Koppen: In the case study, there was a marketing actuary who was poking around in validity of pricing. Our section thought that he should be able to ask for this information to prove the sufficiency of the pricing, and that the chief actuary should have been interested, too. How do you handle the issue of the appropriateness of the rating when you have "dirty" sort of information?

Mr. Mast: I think the only thing you can clarify or evaluate is the consistency with which decisions are made when they are based on murky data, murky information, or not very explicit information at times. Are you referring to information on the application form as opposed to population data?

Mr. Koppen: Both.

Mr. Mast: In many countries, the data are often not sufficient to be very credible, unless you're looking at very broad age groups. Even then, there can be so much variation in the concentration of ages within those age groups that to compare a particular decennial age with another country's comparable age group may not be

comparing apples with apples. I need more experience in dealing with population data outside the U.S. I usually view each country on a case-by-case basis. I really haven't tested the 100 or 200 countries globally that you really need in order to be able to try to address that question very effectively.

Who is pricing business in some country other than the U.S. or Canada? (About half of the audience raised their hands.) What's the most challenging thing you've encountered so far? What has puzzled you the most, or that you wish would go away? Maybe it's the murky data problem. I think that would be the biggest problem.

From the Floor: That's what we find. Even when you get data from other companies, you examine it and try to ask questions about the table, but you can't get a straight answer about what went into it and what was looked at. You're never really quite sure whether to use it or not. When you get into these industry tables, they don't take into account improvements in health care or just general population improvements.

Mr. Mast: Yes, that's an interesting point. Often we don't, or can't, understand what it is we're even looking at. So how do you use it necessarily? You're almost reduced to the point of using something—you don't know what it means for sure, but you've got to use something. You hope that the results won't be too unfavorable, or, at least, will be close to expectations, but you don't know.

That's why I think it's so important to be able to monitor the experience and to be able to evaluate how well you're doing against expectations. We're really spoiled in this country in terms of the kinds of mortality studies to which the SOA asks people to contribute—the data are relatively clean with respect to many different variables. This is much different than what we would see in insured life studies from other countries. For example, the standard and substandard business may all be intermingled, and there may be even some population data involved besides insured lives. They may or may not even use a select and ultimate period to recognize the positive or protective effects of the underwriting process.

Depending on which age you're trying to look at or compare, you don't know how heavily weighted it might be with experience during the early policy durations versus later policy durations, for comparability with other ages, or with anything else in particular. It's very challenging. I think we all enjoy challenging projects; otherwise, we wouldn't become actuaries, right?

Of course, you're used to dealing with a large amount of numbers. You develop some level of comfort with how you try to understand and approach numbers that

you don't readily understand right away, or for which there's little documentation to help you understand that information. I'm sure we do it in our own studies.

From the Floor: There was an earlier comment about dealing with AIDS in Thailand. I know there is someone here who can tell you how successful they have been in Thailand on that issue. They use targeted testing on particular groups for AIDS. Because it's well known in Thailand that they do this testing, they have very low incidence. In fact, their problem with accidental deaths is larger, by three times, than their problem with AIDS.

Mr. Mast: I think it's important to identify the top five or so causes of death in a particular country, and determine how your underwriting process might address the management of those kinds of risks. The others may be so relatively small that it's hard to necessarily address all those other factors in underwriting. If you address the major ones and manage risks accordingly, and focus on things like HIV—where there is apt to be some personal knowledge by the applicant about its associated risks—whether you have testing or not, that needs to be managed through the testing process, if there's any potential at all for messing up the company's experience and, particularly, its financial results.