Introduction to the Underwriting around the world project

The “Underwriting around the world” project falls under the Underwriting sub-committee of the International Actuarial Association Mortality Working Group (IAAMWG). The current chairperson of the sub-committee is Al Klein. The purpose of the project is to provide information to the members of the Working Group, and to any other interested parties, on the medical and non-medical (e.g., financial, lifestyle, etc.) individual life underwriting practices of various countries for mortality business. We are not asking about annuity underwriting. There are three intended outcomes of the research. Firstly, it will provide a source of centralized underwriting terminology which will enhance communication between practitioners in different regions. Secondly, it will provide a central source of data that may encourage countries to use methods of underwriting that haven’t previously been considered. Thirdly, because the mortality of portfolios of insured underwritten lives is heavily influenced by the level and type of underwriting, the research will enable actuaries to make more educated evaluations of the various risk evaluation tools on insured mortality and to allow comparisons among countries.

It is the intention to publish the findings at the ICA Conference in 2014. Presentations at other venues can be arranged following this meeting.

It is important to note that it is not the purpose of this project to influence underwriting practices or to standardize underwriting loadings for particular medical conditions. Each country will have unique market conditions which may mean that one method of underwriting may be more viable, practical or sensible than another. The members of the Underwriting sub-committee are well aware that the method and level of underwriting is often a commercial decision, based on a cost benefit analysis and local market conditions, made by insurance companies operating in a particular market.

The sub-committee is hoping to collect information from many countries and it is important that the information be completed in the same manner, to aid in the comparison of countries and underwriting processes. Therefore, please use this document as a template for your country’s report. If a particular section is not relevant for your country, please indicate that it is “not applicable”.

A sample template completed for the USA and a paper that provides definitions to much of the USA terminology are included to help you complete this template for your country. Contact Al Klein at al.klein@milliman.com with any questions.
Underwriting around the world

1. General Information

Please complete the following general information. Note that the report can be compiled by an underwriter in your country but it must be co-written by (or signed off by) a member of the IAAMWG.

<table>
<thead>
<tr>
<th>Country</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>First name and Surname</td>
<td>Al Klein</td>
</tr>
<tr>
<td>Your company’s name</td>
<td>Milliman</td>
</tr>
<tr>
<td>Your e-mail address</td>
<td><a href="mailto:al.klein@milliman.com">al.klein@milliman.com</a></td>
</tr>
<tr>
<td>Actuarial Association to which you belong</td>
<td>Society of Actuaries</td>
</tr>
<tr>
<td>Date you completed the report (please spell out the month to avoid confusion)</td>
<td>April 9, 2012</td>
</tr>
</tbody>
</table>

Please provide any additional comments you would like to share here:
2. Underwriting types

This section should cover the different types of underwriting that are done in *your country*. You can use the approach and terminology in the USA example or you can use your own approach and terminology, if you prefer. For example, automated acceptance based on data input by a salesman, intermediary or client is an approach you might use that is not listed in the USA example.

Note that your terminology will need to be explained in the Terminology Appendix. Terminology from the appendix should appear in the rest of the document with a capital letter.

Please try to quantify the percentage of business written under each underwriting type within your country.

Insert additional rows as needed.

<table>
<thead>
<tr>
<th>Underwriting Type</th>
<th>Brief Explanation (Explain more thoroughly in Section 2.1)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully underwritten</td>
<td>Most comprehensive type of underwriting</td>
<td></td>
</tr>
<tr>
<td>Medical underwriting</td>
<td>Form of Fully Underwritten, includes a medical exam</td>
<td></td>
</tr>
<tr>
<td>Paramedical underwriting</td>
<td>Form of Fully Underwritten, includes a paramedical exam</td>
<td></td>
</tr>
<tr>
<td>Nonmedical</td>
<td>Form of Fully Underwritten, no exam</td>
<td></td>
</tr>
<tr>
<td>Simplified Issue</td>
<td>Less than a full set of medical questions, no exam</td>
<td></td>
</tr>
<tr>
<td>Guaranteed Issue</td>
<td>Coverage guaranteed as long as certain requirements met</td>
<td></td>
</tr>
<tr>
<td>Guaranteed-to-Issue</td>
<td>Coverage guaranteed, but could be rated</td>
<td></td>
</tr>
</tbody>
</table>

May 1, 2012
2.1. Underwriting Type Detail

In this section, explain in more detail all of the underwriting types listed in Section 2.

Medical / Paramedical Underwriting

This consists of a Full Application and a mandatory medical or paramedical exam. A full application has what is called Part 1 and Part 2. Part 1 contains general non-medical information such as:

- General information
  - Name
  - Address
  - Phone number
  - Gender
  - Date of birth
  - Social security number (or identity number)
  - Drivers license number for Motor Vehicle Report (MVR) check
  - Citizenship
- Occupational details
- Financial information, including at least income
- Habits
  - Smoking
  - Drinking
- Plan information, including riders
- Other coverage, including whether it is going to be replaced
- Whether the applicant has ever been denied coverage
- Owner
- Beneficiary
- Authorization to collect additional information
- Signature

Part 2 contains a series of detailed medical questions, for example:

- Full medical history
- Family history
- Pastimes (e.g., aviation, avocations, scuba diving)

An exam will also be completed either by a doctor (Medical), usually performed in the doctor’s office, or by a paramedical professional (Paramedical), usually performed in the proposed insured’s home. The
exam will include blood and urine specimens as well as a general examination and measurements taken of height, weight, blood pressure, pulse rate, and more.

2.1 Underwriting Type Detail - continued

Guaranteed Issue

The characteristics of guaranteed issue life underwriting include:

- No or a few medical questions
- No medical or paramedical exam, no blood or urine specimen
- The applicant cannot be turned down for coverage, with a few exceptions. Generally the only circumstances where one can be turned down are:
  - The proposed insured doesn't meet specific age requirements for the plan, or
  - The proposed insured currently is living in a nursing home or Long Term Care facility
- Small face amounts
- Return of premium for death in first two years

Guaranteed-to-Issue

Guaranteed-to-issue is sometimes referred to as guaranteed acceptance. This type of underwriting is similar to guaranteed issue; however, the person cannot be turned down for coverage. Instead, rating of the individual is allowed. Guaranteed-to-issue also has relatively small benefits, sometimes return of premium with interest.
3. **Market limits**

This section should cover high level details that are common in your market. For example, provide the ages and amounts that the various underwriting types are used.

Another example is whether there is a standard level at which an individual is considered overweight or obese. This is often measured by Body Mass Index (BMI). It would be useful to understand at what BMI your market would no longer grant standard rates for life cover.

**Limits**

Age and amount limits vary on a company by company basis.

Preferred underwriting is used by virtually all companies on their fully underwritten business and by some on their SI underwritten business. Preferred underwriting is not used with other types of underwriting. Age and amount limits for preferred underwriting also vary on a company by company basis.

Companies in the USA use different BMI cutoff levels for their preferred, standard and substandard risk classes. There is not consistency here among companies. The terms “overweight” and “obese” are not used in underwriting in the USA. Rather, specific cutoff levels are determined on a company by company basis.
4. **Underwriting Tools**

Please list the underwriting tools and tests used in your country, and at what face amount levels each of the tools is commonly used.

You should use the terminology that is relevant for your country and then include it again in the Terminology Appendix at the end. For example you may refer to an APS (Attending Physician Statement) as a PMA (Personal Medical Attendant’s report). If you are aware that a tool may be referred to by another name, in your or another country, you could say:

- Personal Medical Attendant’s report (PMA) – also sometimes known as an Attending Physician Statement (APS).

Please provide a brief explanation for each of these tools here and more details in Section 4.1.

<table>
<thead>
<tr>
<th>Underwriting Tool / Test</th>
<th>Brief Explanation (Explain more thoroughly in Section 4.1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>Collects much information as explained above</td>
</tr>
<tr>
<td>Blood Test</td>
<td>Multiple screens from the blood draw are run to test things like the kidneys, liver, lipids, HIV, and diabetes.</td>
</tr>
<tr>
<td>Urine specimen</td>
<td>Screen for cotinine, drugs, medicines, kidney and bladder function</td>
</tr>
<tr>
<td>Oral fluid</td>
<td>Screen for cotinine, cocaine, HIV</td>
</tr>
<tr>
<td>Medical Information Bureau (MIB)</td>
<td>Screen for fraud and insurance activity</td>
</tr>
<tr>
<td>Attending Physician Statement (APS)</td>
<td>Additional information on impairment from doctor</td>
</tr>
<tr>
<td>Motor Vehicle Record (MVR)</td>
<td>Driving history, license suspension (driving and non-driving related), and license endorsement (e.g., motorcycle)</td>
</tr>
<tr>
<td>Tele-underwriting</td>
<td>Telephone interview of proposed insured</td>
</tr>
<tr>
<td>Pharmaceutical database check</td>
<td>Provides drug usage of proposed insured</td>
</tr>
<tr>
<td>Inspection report</td>
<td>Confirms information about proposed insured</td>
</tr>
<tr>
<td>EKG, Treadmill</td>
<td>Tests for heart</td>
</tr>
<tr>
<td>Chest x-ray</td>
<td>Test for heart, lungs, chest in general</td>
</tr>
<tr>
<td>Financial records / Tax forms</td>
<td>Confirmation of income, net worth</td>
</tr>
</tbody>
</table>
4.1. Underwriting Tool Detail

In this section, explain in more detail all of the underwriting tools listed in Section 4.

Blood Test

The life insurance blood test screens include a variety of tests. The blood test provides the most current medical information on an applicant, except for possibly an APS. The items typically screened for and their corresponding tests include:

- Diabetes screen
  - Glucose – Measures blood sugar levels and is an indicator of diabetes
  - A1C Glycated Hemoglobin – Measures concentration of glucose over time
  - AGP (Advance Glycation Product) – Tests for abnormal blood sugar levels; is indicator of diabetes
- Kidney screen
  - BUN (Blood Urea Nitrogen) – Test for kidney disease and dehydration
  - Creatinine – Test for kidney disorder and dehydration
- Lipid screen
  - Cholesterol – Risk factor in heart disease and stroke
  - HDL (High Density Lipoprotein) and LDL (Low Density Lipoprotein) – Components of cholesterol that are risk factors in heart disease
  - Triglycerides – Risk factor in heart disease
- Liver screen
  - Alkaline Phosphatase – Test for liver and bone disease
  - Bilirubin – Test for liver and blood disease or disorder
  - AST and SGOT (Aspartate Aminotransferase) – Test for liver and muscle disorders
  - ALT and SGPT (Alanine Aminotransferase) – Test for liver disease
  - GGT (Gamma Glutamyltransferase) – Tests for liver disorder, alcohol, drugs
  - Total protein includes Albumin and Globulin
    - Albumin – Test for advanced liver disease and malnutrition
    - Globulin – Test for immune disorders, infections and allergic reactions
- HIV screen
- PSA (Prostate Specific Antigen) for men ages 50+

Urine Specimen

A urine specimen can provide information on:

- Cotinine (metabolite for smoking)
- Cocaine and other drugs
- Medicines
- Kidney and bladder function
4.1 Underwriting Tool Detail - continued

Oral Fluid Test

An oral fluid sample can provide information on:

- HIV
- Cotinine
- Cocaine
- Hepatitis (used in Canada, but not currently approved for use in the USA)

The oral fluid test is less invasive than a blood test. It can also be collected by an agent so a paramedical or medical examiner is not needed.

Medical Information Bureau (MIB)

The MIB was formed years ago by 15 medical directors to help protect insurance companies from fraud. Member companies submit a request for information on a proposed insured. MIB provides information on whether the proposed insured was found to have one or more impairments by another member company when they applied for insurance with this other company. MIB will also indicate what the impairments were, the degree of disease or disorder, and the relevant time frame.

No rating can be attributed to the applicant based solely on the MIB finding without further research to confirm the impairment(s). When underwriting has been completed, the company augments the existing record by sending their findings back to MIB using special MIB codes for MIB to add to their database. MIB retains information for 7 years after which it may no longer be passed along to companies.

MIB has additional services for member companies. One is called the Insurance Activity Index (IAI). The IAI provides companies with information on whether the proposed insured has applied for other coverage. It does not provide information on the outcome of that other application. This information can be used to identify other coverage including the possibility of over (too much) insurance, the possibility of denial of coverage not admitted by the applicant, and potential fraud in the case where the insured is applying for too many policies in a very short period of time.

Attending Physician Statement (APS)

When the extent of a disease or impairment is not known, an underwriter often requests an APS to get a clearer picture of the situation. The advantage of an APS is it generally provides the underwriter with the additional information needed to make a rating decision on the proposed insured. The disadvantage of ordering an APS is that it generally takes at least 7-21 days to receive, slowing the issue process.

Motor Vehicle Record (MVR)

The MVR varies state by state, but all states generally provide information on the driving record of the individual. As there are many motor vehicle deaths and many accidental deaths are alcohol related, this information is important for the underwriting process. Included in the MVR is a history of:

- Moving violations
- DUI (Driving Under the Influence) and DWI (Driving While Intoxicated) citations
- Reckless driving incidences
• Suspension of the drivers license for driving and non-driving reasons (e.g., not paying legally obligated child support payments)
• Special license endorsement (e.g., motorcycle)

4.2 Underwriting Tool Detail - continued

Tele-underwriting

There are different types of tele-underwriting. In general, tele-underwriting is where someone calls the proposed insured to either confirm information provided on the application or to the medical / paramedical examiner. The call may also be used to find out more information. It is always done by phone. The caller who makes the calls can be from the insurance company or from an outside vendor. The caller is usually knowledgeable about medical conditions and knows how to interact with customers. Tele-underwriting answers are usually more honest than from other sources because the proposed insured generally feels more comfortable discussing medical issues with someone who has a medical background and they sometimes don’t want to admit an impairment that might be embarrassing to an agent, whom they might know personally.

When additional questions are asked of the applicant, there is usually a script and pre-programmed questions that pop up on the caller’s screen, depending on how the previous question was answered. These are called drill-down questions and are designed to determine the extent of the impairment that was mentioned on the application.

Pharmaceutical Database Check

The process is that a company will send a request on a particular individual to the vendor, providing their name, social security number and date of birth. The vendor attempts to match the individual in their database and then returns one of three responses:

• The prescription history if there is one,
• That the proposed insured is in the database, but no prescriptions found, or
• That the person was not found

The first two responses are considered “hits” and the company is charged for this service. They are not charged in third instance where there wasn’t a hit. The prescription history that is provided includes:

• The drug prescribed
• The date it was prescribed
• The dosage prescribed
• The prescription period
• The doctor who made the prescription
• The relative importance or seriousness of the drug in a red, yellow, green format, with red drugs being the most serious and green drugs being ones that are generally not a concern, like cold medication. Note that green drugs can become more of a concern when there are multiple ones.

Companies can use this information to find nondisclosure of medications, doctors that may not have been disclosed, and whether the person is taking their medications as prescribed. It may also disclose that the person has an impairment not previously mentioned on the application or to the examiner. This information is determined by knowledge of what each drug is used for. Note that a company must be careful about drawing specific conclusions as many drugs can be used for multiple conditions.
The reason “individual” and “person” was used here instead of “proposed insured” is because some companies utilize this information at the time of claim rather than at time of application. However, most companies that currently utilize the pharmacy database do check on the proposed insured.

4.1 Underwriting Tool Detail - continued

Inspection Report

The inspection report is typically where a third party vendor calls the applicant to validate and augment application information. This is similar to the simplest form of tele-underwriting.

EKG, Treadmill

An EKG (or ECG) is an electrocardiogram or a resting test of the heart. The treadmill test is a stress test to determine whether there are any irregular heart patterns. These are typically performed on older applicants and those applying for large amounts of coverage. There is some concern that an applicant could drop dead from the stress test. A few companies have replaced these tests by blood tests, such as NT-pro BNP. These blood tests provide an indicator of cardiac events, however, the EKG and treadmill test are still relatively common.

Chest x-ray

The chest x-ray is less commonly used in underwriting in the USA today, but is still used for very large amounts of coverage by some companies. The chest x-ray makes images of the heart, lungs, airways, blood vessels, and bones of the spine and chest. It can find issues related to shortness of breath, chest pain, chronic cough and fever.

Financial Records / Tax Forms

The larger incomes today have placed more emphasis on financial underwriting. Financial underwriting is primarily done to make sure that the income and net worth are consistent with the amount of insurance in force and applied for. For business owners, the anticipated growth of the business is also an important consideration.
5. Potential new approaches to life underwriting in your country

Provide current or potential future developments in your country, if any.

These are not new in the USA, but are relatively new compared to the items discussed above.

Preferred underwriting

The key elements of preferred underwriting are used by most companies. These have generally remained the same since preferred underwriting began in the USA in the late 1980s / early 1990s. The key elements of preferred risk underwriting include a profile related to:

- Alcohol and drug abuse
- Blood pressure
- Build
- Cholesterol
- Family history
- MVR
- Personal medical history
- Tobacco use
- Other – Aviation, avocations, citizenship, hazardous activities, and foreign travel and residence

While the elements themselves haven’t changed much over the years, what has changed are the number of classes and the cutoff levels of each for the specific criteria. The number of risk classes has increased. With this increase, the cutoff levels have moved both up and down, depending on the company, product and risk class.

Another more recent change is that some companies have moved from a knockout approach to a debit/credit approach. A knockout approach is where an applicant does not qualify for a particular risk class if they do not meet one or more of the cutoff levels for the full set of criteria. A debit/credit approach is one where a point system is used for good and bad levels for the criteria. At the end, the points are summed and the point total determines which risk class into which the applicant is placed. There are also hybrid systems which include a combination of knockout and debit/credit. In fact, most debit/credit structures have some element of knockout in them.

Another more recent development is that some companies allow exceptions to the published guidelines. These exceptions are sometimes published and sometimes kept internally to be applied to the criteria. The types of exceptions allowed vary considerably.

Older age underwriting

Older age underwriting programs in the USA may include one or more of the following:

- Cognitive testing – Test for dementia and other cognitive impairments
- Functional testing – Test for frailty
- Changes to the traditional levels of underwriting acceptance – Lower readings on blood pressure, cholesterol, and weight, for example, could be indicative of more serious problems than higher readings for the elderly
• Supplemental questionnaire – This may include questions on such things as social, mental and physical activities, activities of daily living, living arrangements and travel.


Has any work been done in your country to measure the impact of different underwriting methods on mortality? If so, please explain briefly.

<table>
<thead>
<tr>
<th>Type of Work</th>
<th>Brief Explanation (Explain more thoroughly in Section 6.1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protective Value Study</td>
<td>Comparison of cost and benefit of test by gender, age and face amount</td>
</tr>
<tr>
<td>Testing and Validation</td>
<td>Rules determined by large portion of data and validated with remaining data</td>
</tr>
</tbody>
</table>


Protective Value Studies and Testing and Validation are done both on an individual company basis and an industry basis. Individual company work is generally not shared publicly. Protective Value Studies can also be called Cost/Benefit Analysis. One recent Cost/Benefit Analysis, published in January 2012, was completed by a research team for the Society of Actuaries on potential new medical markers. A link to the study is shown below.


In addition to providing the analysis for each of the potential new medical markers, the study provides a basis for doing other cost/benefit analysis.

Testing and validation is becoming more widely used in the Underwriting area as predictive analytics becomes more popular. Predictive analytics is the process of studying various data elements and determining which are most predictive of the event of interest. For life underwriting, the event usually studied is mortality, although it could also be lapsation.
7. **Underwriting as a profession in your country**

This section deals with the individuals who do the actual underwriting in your country. Indicate your answers to the following questions and then explain, as needed, in more detail in Section 7.1.

<table>
<thead>
<tr>
<th>Q.</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Who does the underwriting in your country? (Check all that apply).</td>
<td>_ Actuary</td>
</tr>
<tr>
<td>b. What academic background do underwriters usually have?</td>
<td>Varies</td>
</tr>
<tr>
<td>c. Is there a formal profession that underwriters belong to?</td>
<td>x_ Yes</td>
</tr>
<tr>
<td>d. Is there a nationally recognized underwriting qualification?</td>
<td>x_ Yes</td>
</tr>
<tr>
<td>e. Is there a system of formal, recorded ongoing Continuing Professional Development (CPD)?</td>
<td>_ Yes</td>
</tr>
<tr>
<td>f. Are there nationally consistent and recognized “titles” for an underwriter (e.g., junior underwriter, senior underwriter, chief underwriter)?</td>
<td>x_ Yes</td>
</tr>
</tbody>
</table>
### 7.1 Underwriting as a profession – Detailed explanation

a. Very rarely is an actuary involved in the individual life underwriting process in the USA. Some actuaries, however, are involved in the group underwriting process. An actuary may help design the various underwriting programs or help determine the protective value or cost/benefit of a particular underwriting tool or test. Some actuaries oversee Underwriting Departments and help make decisions on very high profile cases, but they are rarely involved in the day-to-day underwriting process.

The day to day underwriting is done by the underwriter, sometimes with some help from the doctor on more complex medical cases.

b. There is no Underwriting degree at universities so underwriters have a variety of backgrounds. Some underwriters started in the medical profession as nurses and chose to move to the underwriting profession for more regular work hours. Most underwriters have a college degree.

c. Many underwriters in the USA belong to an organization called AHOU (Association of Home Office Underwriters). Many also belong to local underwriting organizations.

d. There are two designations specifically for underwriters that are recognized in the USA. Underwriters may also have other designations. The two recognized designations are the FALU (Fellow, Academy of Life Underwriting) and CLU (Chartered Life Underwriter). The FALU is the newer designation and is achieved upon the successful completion of four exams administered by the Academy of Life Underwriting. The CLU was created in 1927 and involves training in life insurance financial matters. The CLU is issued solely by the American College, which also issues other designations related to financial and estate planning. To receive a CLU designation, five core and three elective courses must be completed. There are annual continuing education requirements as well.

e. While there are no formal continuing education requirements, one of the missions of the Academy of Life Underwriting is to provide continued professional growth opportunities for FALUs. A number of educational opportunities are available every year.

f. Titles for underwriters vary on a company by company basis, but some general levels include:

- Junior Underwriter – 1 to 3 years
- Senior Underwriter – 5+ years
- Consulting Underwriter – 10+ years
- Chief Underwriter – 10+ years
8. Appendix – Terminology

Please provide a list of commonly used underwriting terminology in alphabetical order, along with explanations of the meaning of the terminology.

Application
A full application has what is called Part 1 and Part 2. Part 1 contains general non-medical information such as:

- General information
  - Name
  - Address
  - Phone number
  - Gender
  - Date of birth
  - Social security number (or taxpayer identity number)
  - Drivers license number for Motor Vehicle Report (MVR) check
  - Citizenship
- Occupational details
- Financial information, including at least income
- Habits
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- Plan information, including riders
- Other coverage, including whether it is going to be replaced
- Whether the applicant has ever been denied coverage
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- Signature

Part 2 contains a series of detailed medical questions, for example:

- Full medical history
- Family history
- Pastimes (e.g., aviation, avocations, scuba diving)
Attending Physician Statement (APS)

When the extent of a disease or impairment is not known, an underwriter often requests an APS to get a clearer picture of the situation. The advantage of an APS is that it generally provides the underwriter with the additional information needed to make a rating decision on the proposed insured. The disadvantage of ordering an APS is that it generally takes at least 7-21 days to receive, slowing the final decision and issue process. The APS typically contains the last five years of medical treatment, or more in cases with a significant long term illness.

Blood Test

The life insurance blood test screens include a variety of tests. The blood test provides the most current medical information on an applicant, except for possibly an APS. The items typically screened for and their corresponding tests include:

- Diabetes screen
  - Glucose – Measures blood sugar levels and is an indicator of diabetes
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  - Cholesterol – Risk factor in heart disease and stroke
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- Liver screen
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- HIV screen
- PSA (Prostate Specific Antigen) for men ages 50+

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Inspection Report

The inspection report is typically where a third party vendor calls the applicant to validate and augment application information. This is similar to the simplest form of tele-underwriting.

Medical / Paramedical Underwriting

This consists of a Full Application and a mandatory medical or paramedical exam.

An exam will be completed either by a doctor (Medical), usually performed in the doctor’s office, or by a paramedical professional (Paramedical), usually performed in the proposed insured’s home. The exam will include medical history questions, blood and urine specimens, a general examination, and measurements taken of height, weight, blood pressure, pulse rate, and more.
Medical Information Bureau (MIB)

The MIB was formed years ago by 15 medical directors to help protect insurance companies from fraud. Member companies submit a request for information on a proposed insured. MIB provides information on whether the proposed insured was found to have one or more impairments by another member company when they applied for insurance with this other company. MIB will also indicate what the impairments were.

No rating can be attributed to the applicant based solely on the MIB finding without further research to confirm the impairment(s). When underwriting has been completed, the company sends their decision back to MIB using special MIB codes for MIB to add to their database. MIB retains information for 7 years after which it may no longer be passed along to companies.

In recent years, MIB has added additional services for member companies. One is called the Insurance Activity Index (IAI). The IAI provides companies with information on whether the proposed insured has applied for other coverage. It does not provide information on the outcome of that other application. This information can be used to identify possible other coverage, possible denial of coverage not admitted by the applicant, or potential fraud (if the proposed insured is applying for too many policies in a very short period of time).

Motor Vehicle Record (MVR)

The MVR varies state by state, but all states generally provide information on the driving record of the individual. As there are many motor vehicle deaths and many accidental deaths are alcohol related, this information is important for the underwriting process. Included in the MVR is a history of:

- Moving violations
- DUI (Driving Under the Influence) and DWI (Driving While Intoxicated) citations
- Reckless driving incidences
- Suspension of the drivers license for driving and non-driving reasons (e.g., not paying legally obligated child support payments)
- Special license endorsement (e.g., motorcycle)

Older age underwriting

Older age underwriting programs in the USA may include one or more of the following:

- Cognitive testing – Test for dementia and other cognitive impairments
- Functional testing – Test for frailty
- Changes to the traditional levels of underwriting acceptance – Lower readings on blood pressure, cholesterol, and weight, for example, could be indicative of more serious problems than higher readings for the elderly
- Supplemental questionnaire – This may include questions on such things as social, mental and physical activities, activities of daily living, living arrangements and travel.
Oral Fluid Test

An oral fluid sample can provide information on:

- HIV
- Cotinine
- Cocaine
- Hepatitis (used in Canada, but not currently approved for use in the USA)

The oral fluid test is less invasive than a blood test. It can also be collected by an agent so a paramedical or medical examiner is not needed.

Pharmaceutical Database Check

The process is that a company will send a request on a particular individual to the vendor, providing their name, social security number and date of birth. The vendor attempts to match the individual in their database and then returns one of three responses:

- The prescription history if there is one,
- That the proposed insured is in the database, but no prescriptions found, or
- That the person was not found

The first two responses are considered “hits” and the company is charged for this service. They are not charged in third instance where there wasn’t a hit. The prescription history that is provided includes:

- The drug prescribed
- The date it was prescribed
- The dosage prescribed
- The prescription period
- The doctor who made the prescription
- The relative importance or seriousness of the drug in a red, yellow, green format, with red drugs being the most serious and green drugs being ones that are generally not a concern, like cold medication. Note that green drugs can become more of a concern when there are multiple ones.

Companies can use this information to find nondisclosure of medications, doctors that may not have been disclosed, and whether the person is taking their medications as prescribed. It may also disclose that the person has an impairment not previously mentioned on the application or to the examiner. This information is determined by knowledge of what each drug is used for. Note that a company must be careful about drawing specific conclusions as many drugs can be used for multiple conditions.

The reason “individual” and “person” was used here instead of “proposed insured” is because some companies utilize this information at the time of claim rather than at time of application. However, most companies that currently utilize the pharmacy database do check on the proposed insured.
Preferred underwriting

The key elements of preferred underwriting are used by most companies. These have generally remained the same since preferred underwriting began in the USA in the late 1980s / early 1990s. The key elements of preferred risk underwriting include:

- Alcohol and drug abuse
- Blood pressure
- Build
- Cholesterol
- Family history
- MVR
- Personal medical history
- Tobacco use
- Other – Aviation, avocations, citizenship, foreign travel, hazardous activities, residence

While the elements themselves haven’t changed much over the years, what has changed are the number of classes and the cutoff levels of each for the specific criteria. The number of risk classes has increased. With this increase, the cutoff levels have moved both up and down, depending on the company, product and risk class.

Another more recent change is that some companies have moved from a knockout approach to a debit/credit approach. A knockout approach is where an applicant does not qualify for a particular risk class if they do not meet one or more of the cutoff levels for the full set of criteria. A debit/credit approach is one where a point system is used for good and bad levels for the criteria. At the end, the points are summed and the point total determines which risk class the applicant is placed. There are also hybrid systems which include a combination of knockout and debit/credit. In fact, most debit/credit structures have some element of knockout in them.

Another more recent development is that some companies allow exceptions to the published guidelines. These exceptions are sometimes published and sometimes kept internally to be applied to the criteria. The types of exceptions allowed vary considerably.

Tele-underwriting

There are different types of tele-underwriting. In general, tele-underwriting is where someone calls the proposed insured to either confirm information provided on the application or to the medical / paramedical examiner. The call may also be used to find out more information. It is always done by phone. The caller who makes the calls can be from the insurance company or from an outside vendor. The caller is usually knowledgeable about medical conditions and knows how to interact with customers. Tele-underwriting answers are usually more honest than from other sources because the proposed insured generally feels more comfortable discussing medical issues with someone who has a medical background and they sometimes don’t want to admit an impairment that might be embarrassing to an agent, whom they might know personally.

When additional questions are asked of the applicant, there is usually a script and pre-programmed questions that pop up on the caller’s screen, depending on how the previous question was answered. These are called drill-down questions and are designed to determine the extent of the impairment that was mentioned on the application.
Urine Specimen

A urine specimen can provide information on:

- Cotinine (metabolite for smoking)
- Cocaine and other drugs
- Medicines
- Bladder and kidney function
9. Appendix – Standard Application Form

Please attach one or more examples of typical application forms.
10. Appendix – Research

Please provide references to any research that you know of on underwriting in general, and on the impact of underwriting on mortality, in particular.

Introduction to the Underwriting around the world project

The “Underwriting around the world” project falls under the Underwriting sub-committee of the International Actuarial Association Mortality Working Group (IAAMWG). The current chairperson of the sub-committee is Al Klein. The purpose of the project is to provide information to the members of the Working Group, and to any other interested parties, on the medical and non-medical (e.g., financial, lifestyle, etc.) individual life underwriting practices of various countries for mortality business. We are not asking about annuity underwriting. There are three intended outcomes of the research. Firstly, it will provide a source of centralized underwriting terminology which will enhance communication between practitioners in different regions. Secondly, it will provide a central source of data that may encourage countries to use methods of underwriting that haven’t previously been considered. Thirdly, because the mortality of portfolios of insured underwritten lives is heavily influenced by the level and type of underwriting, the research will enable actuaries to make more educated evaluations of the various risk evaluation tools on insured mortality and to allow comparisons among countries.

It is the intention to publish the findings at the ICA Conference in 2014. Presentations at other venues can be arranged following this meeting.

It is important to note that it is not the purpose of this project to influence underwriting practices or to standardize underwriting loadings for particular medical conditions. Each country will have unique market conditions which may mean that one method of underwriting may be more viable, practical or sensible than another. The members of the Underwriting sub-committee are well aware that the method and level of underwriting is often a commercial decision, based on a cost benefit analysis and local market conditions, made by insurance companies operating in a particular market.

The sub-committee is hoping to collect information from many countries and it is important that the information be completed in the same manner, to aid in the comparison of countries and underwriting processes. Therefore, please use this document as a template for your country’s report. If a particular section is not relevant for your country, please indicate that it is “not applicable”.

A sample template completed for the USA and a paper that provides definitions to much of the USA terminology are included to help you complete this template for your country. Contact Al Klein at al.klein@milliman.com with any questions.
Underwriting around the world

1. General Information

Please complete the following general information. Note that the report can be compiled by an underwriter in your country but it must be co-written by (or signed off by) a member of the IAAMWG.

<table>
<thead>
<tr>
<th>Country</th>
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<tr>
<td>First name and Surname</td>
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<td>Your company’s name</td>
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<td>Your e-mail address</td>
<td></td>
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<tr>
<td>Actuarial Association to which you belong</td>
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<tr>
<td>Date you completed the report (please spell out the month to avoid confusion)</td>
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</table>

Please provide any additional comments you would like to share here:
2. **Underwriting types**

This section should cover the different types of underwriting that are done in *your country*. You can use the approach and terminology in the USA example or you can use your own approach and terminology, if you prefer. For example, automated acceptance based on data input by a salesman, intermediary or client is an approach you might use that is not listed in the USA example.

Note that your terminology will need to be explained in the Terminology Appendix. Terminology from the appendix should appear in the rest of the document with a capital letter.

Please try to quantify the percentage of business written under each underwriting type within your country.

Insert additional rows as needed.

<table>
<thead>
<tr>
<th>Underwriting Type</th>
<th>Brief Explanation (Explain more thoroughly in Section 2.1)</th>
<th>Percentage</th>
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</table>
2.1. Underwriting Type Detail

In this section, explain in more detail all of the underwriting types listed in Section 2.
2.1 Underwriting Type Detail - continued
3. **Market limits**

This section should cover high level details that are common in your market. For example, provide the ages and amounts that the various underwriting types are used.

Another example is whether there is a standard level at which an individual is considered overweight or obese. This is often measured by Body Mass Index (BMI). It would be useful to understand at what BMI your market would no longer grant standard rates for life cover.
4. Underwriting Tools

Please list the underwriting tools and tests used in your country, and at what face amount levels each of the tools is commonly used.

You should use the terminology that is relevant for your country and then include it again in the Terminology Appendix at the end. For example you may refer to an APS (Attending Physician Statement) as a PMA (Personal Medical Attendant’s report). If you are aware that a tool may be referred to by another name, in your or another country, you could say:

- Personal Medical Attendant’s report (PMA) – also sometimes known as an Attending Physician Statement (APS).

Please provide a brief explanation for each of these tools here and more details in Section 4.1.

<table>
<thead>
<tr>
<th>Underwriting Tool / Test</th>
<th>Brief Explanation (Explain more thoroughly in Section 4.1)</th>
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</table>
4.1. Underwriting Tool Detail

In this section, explain in more detail all of the underwriting tools listed in Section 4.
4.1 Underwriting Tool Detail - continued
5. Potential new approaches to life underwriting in your country

Provide current or potential future developments in your country, if any.

Has any work been done in your country to measure the impact of different underwriting methods on mortality? If so, please explain briefly.

<table>
<thead>
<tr>
<th>Type of Work</th>
<th>Brief Explanation (Explain more thoroughly in Section 6.1)</th>
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7. **Underwriting as a profession in your country**

This section deals with the individuals who do the actual underwriting in your country. Indicate your answers to the following questions and then explain, as needed, in more detail in Section 7.1.

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>a. Who does the underwriting in your country? (Check all that apply).</td>
<td>_Actuary</td>
<td>_Doctor</td>
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<td>b. What academic background do underwriters usually have?</td>
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<tr>
<td>c. Is there a formal profession that underwriters belong to?</td>
<td>_Yes</td>
<td>_No</td>
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<tr>
<td>d. Is there a nationally recognized underwriting qualification?</td>
<td>_Yes</td>
<td>_No</td>
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<tr>
<td>e. Is there a system of formal, recorded ongoing Continuing Professional Development (CPD)?</td>
<td>_Yes</td>
<td>_No</td>
</tr>
<tr>
<td>f. Are there nationally consistent and recognized “titles” for an underwriter (e.g., junior underwriter, senior underwriter, chief underwriter)?</td>
<td>_Yes</td>
<td>_No</td>
</tr>
</tbody>
</table>
7.1 Underwriting as a profession – Detailed explanation

a.

b.

c.

d.

e.

f.
8. Appendix – Terminology

Please provide a list of commonly used underwriting terminology in alphabetical order, along with explanations of the meaning of the terminology.
9. **Appendix – Standard Application Form**

Please attach one or more examples of typical application forms.
10. **Appendix – Research**

Please provide references to any research that you know of on underwriting in general, and on the impact of underwriting on mortality, in particular.