BRACKENRIDGE'S MEDICAL SELECTION *of* LIFE RISKS

Fifth Edition

Dr R. D. C. BRACKENRIDGE
Dr RICHARD S. CROXSON
Dr ROSS MACKENZIE

Swiss Re

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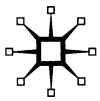

Softcover reprint of the hardcover 5th edition 2006 978-0-230-00771-0

First published 2006 by
PALGRAVE MACMILLAN
Houndmills, Basingstoke, Hampshire RG21 6XS and
175 Fifth Avenue, New York, N. Y. 10010
Companies and representatives throughout the world

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ISBN 978-1-349-56634-1 ISBN 978-1-349-56632-7 (eBook)
DOI 10.1007/978-1-349-56632-7

This book is printed on paper suitable for recycling and made from fully managed and sustained forest sources.

A catalogue record for this book is available from the British Library.

A catalogue record for this book is available from the Library of Congress.

10 9 8 7 6 5 4 3 2 1
15 14 13 12 11 10 09 08 07 06

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ACKNOWLEDGEMENTS

We would like to thank the many people who have helped in the production of this, the fifth edition of *Medical Selection of Life Risks*.

First and foremost, our colleagues in clinical and insurance medicine for their individual chapter contributions, both new rewrites and updates. We thank them for their expertise, time and effort and for the pleasure it has given us to edit their work.

Diana Harding came on board later as Project Coordinator, and her extensive experience in the insurance industry made her the ideal person for such a difficult task, persevering in collecting and collating the various chapters from North America, Australia and Europe.

Swiss Re generously gave us access to secretarial, copying and communication facilities, without which our job would have been much harder. Lucie Stokoe from the actuarial department of Swiss Re provided the life tables in the appropriate formats.

Thanks also to our publishers for their cooperation and understanding over the past 2–3 years of production.

Finally, special thanks to our long-suffering secretaries and families for their forbearance throughout this project.

R D C Brackenridge
R S Croxson
R MacKenzie

PREFACE

It is now almost fifty years since Sir Daniel Davies, CMO of Guardian Assurance in London, approached me to ask if I would be interested in writing a booklet for the guidance of life underwriters in their daily work and for doctors issuing reports on applicants for insurance.

For my sins I said I would be interested and prepared a draft of my plans, which was approved although it was rather more extensive than originally intended. So, what was supposed to be a booklet was eventually published as a hardback volume of 480 pages in 1962 under the title of *The Medical Aspects of Life Assurance*. This volume had mainly a local appeal in the UK although it was also published in the USA.

Following the regional success of this book, it was decided that if there were to be any follow-up volumes, the life insurance interest would have to be widened to include North America, which has the largest insurance base worldwide. With this in mind, plans were made to produce another volume of the book, which was re-named *Medical Selection of Life Risks* and was published in 1977. This was later to be known as the first edition. At this point in my task as author, I was fortunate to receive encouragement from some eminent figureheads of the life insurance industry, such as Arthur Steeds FIA of the Mercantile and General Reinsurance Co. in London, Harry Ungerleider, Medical Director of North American Re in New York and that doyen of all life underwriters, Charlie Will. My cause was also helped considerably when I became a member of the Association of Life Insurance Medical Directors of America (ALIMDA), later to become the American Academy of Insurance Medicine (AAIM).

The next edition of the book, published in 1985, was an important landmark in its history. Up until then, I had been the sole author of the text, with the welcome assistance of various colleagues. However, the increasing specialization of the medical disciplines and the expansion of life insurance to include other markets, such as disability and critical illness, put the task beyond the scope of a single author. Accordingly, the publishers and I agreed that any future editions should be edited, with experts from the insurance industry and insurance medicine invited to contribute chapters. I therefore asked my friend and colleague W. John Elder MD to join me as co-editor of the third edition of the book. John, with his experience as editor of the *Journal of Insurance Medicine*, recruited contributors from North America while I lined up contributors from the UK and elsewhere.

And now we have reached a fifth edition. With the passage of time editors have changed, and so have our contributors. In this edition there are several chapters completely re-written by new contributors and having exceptional merit. Other chapters have been revised where necessary. All these contributors have been acknowledged elsewhere and have my grateful thanks.

As senior editor, my input to this edition has been severely restricted by my failing vision and has been mainly advisory. I have had to leave the serious editing to my co-editors in Toronto and London.

Looking back over the past fifty years I must say that the work involved in writing and editing *Medical Selection of Life Risks* has been challenging, but in the end, intellectually rewarding.

It is now time for me to bow out and leave future development of the book to others. For my part, I shall be quite content to retire to the sidelines and observe events unfolding whilst maintaining a benevolent presence.

R D C Brackenridge

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Part I

CHAPTER 1

A HISTORICAL SURVEY OF THE DEVELOPMENT OF LIFE ASSURANCE

R D C BRACKENRIDGE

> Whenever there is a contingency, the cheapest way of providing against it is by uniting with others, so that each man may subject himself to a small deprivation, in order that no man may be subjected to a great loss. He, upon whom the contingency does not fall, does not get his money back again, nor does he get from it any visible or tangible benefit, but he obtains security against ruin and consequent peace of mind. He, upon whom the contingency does fall, gets all that those whom fortune has exempted from it have lost in hard money, and is thus enabled to sustain an event which would otherwise overwhelm him.
>
> *Select Committee of the House of Commons, 1825*

EARLY LIFE TABLES

The earliest forms of insurance mainly concerned ships and their cargoes; the business was well established by the Middle Ages both in Great Britain and the continent of Europe. The first known life policy was issued in 1583 following strictly on the lines of a marine policy, but it was not until the late 17th century that efforts were made to meet the growing demand for life insurance.

Assurance was administered then by various societies under the tontine system, a tontine consisting of groups of people who banded together with the object of insuring their lives to make

provision for their widows and children. Each member paid an entrance fee and an annual subscription, which went towards the creation of a fund to meet death claims within the group, a proportion of the fund being set aside to cover the expense of running the scheme. Only the very young and very old were excluded from the tontines. Records show that this system was used by the Society for Widows and Orphans, and the Mercers' Company sponsored an insurance scheme run on similar lines to provide annuities for the widows of clergymen.

There were many abuses connected with life assurance as it was conducted in those days, one of the more serious being the practice of insuring a person's life without their knowledge. This allowed the more unscrupulous members of society to gamble on the lives of others which were at best none too sound, and many schemes failed financially for this reason.

It is clear that the failure of some of these earlier undertakings was due mainly to the lack of scientific selection of members. Thus the Traders Exchange House Office, founded in 1706 by Charles Povey, lasted only four years because most of the subscribers were bad lives and the dividend became so small that there were no inducements for new members to join or old ones to continue. Another company, also founded in 1706 but run on sounder lines, was the Amicable Society for a Perpetual Assurance Office, the first undertaking of its kind to be incorporated by Royal Charter. The number of subscribers was limited, and the rules regarding admission, premiums payable and amounts available for settling claims were strict. This society prospered until 1866, when it was absorbed into the Norwich Union Life Insurance Society.

The only other institutions empowered to transact life assurance at this time were the Royal Exchange Assurance and the London Assurance, both established in 1721, however selection of lives was still crude and was not founded on a scientific basis. The agents of the London Assurance were instructed in 1725 to interview the applicant in person and to have him prove his identity; the insurable interest was to be examined, and the applicant was to be asked whether he had had smallpox. The premium rates were determined accordingly but, even so, the business was still little more than a gamble.

The first serious attempt to establish population mortality rates was made by John Graunt, the son of a London draper, who in his spare time analyzed the records of the weekly christenings and burials in the City of London, the keeping of which had become an established custom since the plague of 1603. In 1662 Graunt published a book called *Natural and Political Observations made upon the Bills of Mortality*, and from this information he compiled a 'Table of Survivors', which was to be a model for subsequent life tables. Graunt's efforts, although crude, were commendable for one who had received no special training.

Some years later, Edmund Halley, the Astronomer Royal, made a study of the records of births and deaths that had been regularly kept in Breslau in Silesia since 1584, and in 1693 he published an essay, 'An Estimate of the Degrees of Mortality of Mankind drawn from Curious Tables of the Births and Funerals at the City of Breslaw'. The life table (*see* Table 1.1) that Halley prepared cannot be regarded as accurate, but it was the first work by a competent scientist using reasonably up-to-date statistics.

Although Halley's work, along with that of Newton and De Moivre, his contemporary mathematicians, laid the foundations of actuarial science, it was not until the next generation that James Dodson, a pupil of De Moivre, showed that life assurance was

Table 1.1. Halley's life table.[a]

Age (years)	Expectation of life (years)	Age (years)	Expectation of life (years)
0	33.50	45	19.22
5	41.55	50	16.81
10	39.99	55	14.51
15	36.86	60	12.09
20	33.61	65	9.73
25	30.38	70	7.53
30	27.35	75	5.99
35	24.51	80	5.74
40	21.78		

[a]Based on mortality experience in the city of Breslau during the years 1687–91.

practicable with premiums properly graduated according to age. Dodson was first and foremost a mathematician, and was elected a Fellow of the Royal Society in 1755 for his best known work *The Mathematical Repository*, but he soon turned his energies to the mathematics of life assurance.

In those days, the only forms of life assurance available were the year-to-year assurances granted by the charter corporations, and the small, variable death benefits provided by the 'Old Amicable'. Dodson, realizing that these arrangements were unsatisfactory and could be bettered, produced a treatise early in 1756 entitled *First Lecture on Insurances*, and in March of the same year he invited all those interested to meet him at the Queen's Head, Paternoster Row, in the City of London, to explain to them the principles on which scientific life assurance could be run. There were several such meetings during which Dodson expounded his theories on how premiums should be calculated and how a life assurance fund would work out based on various assumptions. These principles, having been discussed by the group, were finally adopted, and paved the way for the formation in 1762 of the Society for Equitable Assurances on Lives and Survivorships, which exists today as the Equitable Life Assurance Society. This was the very first life office to be run on true actuarial lines, and the original conception of mutual life assurance is still apparent today in the conduct of life business all over the world. Unfortunately Dodson died in 1757 and did not live to see the inauguration of the Society.

The original scale of premiums was based upon the bills of mortality for London in the years 1728–50 as calculated by Dodson. Later, in 1781, a modification of the Northampton Table, first published by Richard Price in 1771, was introduced for the Society's calculations. Richard Price was born in Bridgend, Glamorgan, in 1723, became a doctor of divinity and from 1758 lived at Newington Green, London, where he officiated as a minister of the English Presbyterian Church. He was elected a Fellow of the Royal Society in 1765. Price's nephew, William Morgan, was appointed assistant actuary of the Equitable in 1774 and actuary in the following year.

While the first office of the Society for Equitable Assurances on Lives and Survivorships was being prepared in Nicholas Lane, six meetings of the directors took place at weekly intervals in the White Lion Tavern in Cornhill, where the first 27 proposals were accepted. It has been definitely established that the first office of the Society was the disused parsonage of St Nicholas Acons in Nicholas Lane, which stood immediately north of the graveyard. A plaque has now been placed there by the Corporation of the City of London to show that this was where life assurance started. The site is now occupied by the Lombard Street office of the National Westminster Bank.

Life assurance was then standing on the threshold of a new era in which mathematical reality had taken the place of chance. A further consolidation was the passing of the Life Assurance Act by Parliament in 1774. This did away with many of the old abuses, such as speculation on the lives of others by persons who had no real interest in those lives.

The Northampton Table mentioned earlier is of special historic interest in the evolution of vital statistics. Various editions of this table were published; the first, in 1771, was based on bills of mortality for the parish of All Saints over the period 1735–70. The fourth edition, generally referred to as the Northampton Table and published in 1783, was based on similar data over the period 1735–80. Both versions of the table were used for the calculation of premium rates by the Equitable. By 1843 the Northampton Table had been largely abandoned for the calculation of premium rates.

Both versions of the table were calculated essentially on the same basis. The basic data were the number of registered births and the number of deaths occurring during the period. The population was assumed to be stationary, but adjustments were made to allow for the effects of migration. Because many births were not registered the population was underestimated and, consequently, the resulting mortality rates were overstated.

Several years later, in 1837, the registration of births, marriages and deaths became compulsory in England, and the accumulated data enabled William Farr, the Compiler of Abstracts in the General Register Office, to develop a national system of vital statistics from which he published the first official English life tables in the Registrar General's Fifth Annual Report of 1843.

Life insurance in the USA had developed in a manner similar to that in England. Entry into fire and marine insurance stemmed from the American Revolution, when Lloyds of London ceased to be available to USA ships; thus the Insurance Company of North America, chartered in 1794 in the city of Philadelphia and the oldest stock insurance company in the USA, was formed to fill the gap. This was the first company to issue life policies in the USA, when it wrote six temporary policies on the lives of ships' captains in charge of valuable cargoes on international sea routes. Even so, this type of business was strictly limited, being incidental to marine insurance.

It was not until 1809 in Philadelphia that the Pennsylvania Company for Insurance and Granting of Annuities started selling life insurance on a strictly commercial basis. This company is important historically because of the innovations it introduced in its underwriting practice, some of which are still used today: notably the requirement of an application or proposal, and a medical examination. Premiums charged were also based on the age of the applicant. Some time later, in 1823, the Massachusetts Hospital Life Insurance Company in Boston introduced a rate book.

Moorhead, in his book on the history of the actuarial profession in North America,[1] records that Elizur Wright, an actuary, invented the 'arithmeter' (a device to ease the work of calculation) and, as Commissioner of Insurance in the Commonwealth of Massachusetts, introduced 'fairness' in insurance with regulations such as those regarding withdrawal (surrender) values. Wright was also actuary of the Massachusetts Hospital Life Insurance Company and of the New England Mutual Life Insurance Company, and is known to have visited actuaries in England in 1844. In fact, several exchange visits took place at about this time between actuaries from Great Britain and the USA; Charles Gill, a mathematician and actuary who had come to the USA from England in 1831, returned to visit colleagues in England in 1851. Finally, in 1861, the American Experience Table was submitted. Elizur Wright died in 1885 after 40 years of activity in life insurance as an actuary, state regulator and writer.

Nevertheless, life business at the beginning of the 19th century existed mainly to facilitate commerce by supplying finance on a credit basis, and therefore the needs of only a small, privileged section of the community were being met. It was not until the 1840s that the base of life insurance was eventually broadened, giving the industry an almost miraculous boost. Inspired by the concept of mutual insurance, which had been practiced in England since 1762 by the Society for Equitable Assurances on Lives and Survivorships, two new life insurance companies – the Mutual Life Insurance Company of New York and the New England Mutual Life Insurance Company of Boston – began to transact business in 1843 on the mutual plan. In fact 1843 was a milestone in the history of life insurance in the USA, for it marked the beginning of a spectacular increase in the number of new companies formed and in the volume of new business transacted. After 1843 five more companies began to sell life insurance policies on a participating basis: the State Mutual Life Assurance Company of America in Worcester, Massachusetts in 1844, the New York Life Insurance Company and the Mutual Benefit Life Insurance Company of Newark in 1845, the Connecticut Mutual Life Insurance Company of Hartford, and the Penn Mutual Life Insurance Company of Philadelphia, both in 1847. All these seven companies grew in strength and have survived to the present day.[2]

The tremendous growth which occurred in the decades that followed coincided with a rapid increase in the population, which by now had become aware of the benefits of life insurance, and with an upsurge in the economic development of the country in relation to both agriculture and industry.

In Canada the first company to start business was the Canada Life Assurance Company in 1847, which was incorporated in 1849. In 1867, when Canada became the self-governing Dominion of Canada, Canada Life was still the only native Canadian company operating, although there were several branches of British and USA companies all issuing life policies within the Dominion.

In Great Britain there was a steady growth in the number of life offices conducting business during the period from 1800–70, but such was the uncontrolled nature of the growth that many offices had to close down, so that of the 192 companies operating in 1855, only 100 remained by 1870.

The first purely Scottish company to start life assurance was the Scottish Widows' Fund in 1815; there are records that an office transacting fire insurance opened a life department in about 1809, but this soon closed down due to lack of business. The Scottish Widows' Fund was followed by the Edinburgh Life Assurance Company in 1823, the Standard Life Assurance Company in 1825 and the Scottish Amicable Life Assurance Society in 1826.

INDUSTRIAL INSURANCE

Despite its obvious benefits to a community, life insurance in the mid-19th century was a luxury that could only be afforded by the relatively well-off: having to pay premiums annually, or even every 3 months, made insurance for the weekly-paid worker virtually impossible. In 1854 a British parliamentary committee investigated the matter and recommended that insurance companies should make scientifically sound insurance available, with premium payments adjusted to meet the needs of the working class. Thus 'industrial assurance' was born in 1854, when the Prudential Assurance Company in London inaugurated a scheme whereby life assurance cover was offered in return for a small weekly payment, the premiums being collected by an agent of the company who called at the home of the assured.

The utility of the scheme appealed to the working class, and industrial assurance grew to become a large and important branch of life business in Great Britain. It provided money to pay for burial expenses on the death of a family member, cash sums on maturity of an endowment policy and, for many industrial policy-holders, it represented their only form of savings. Furthermore, it encouraged a spirit of thrift and sturdy independence in the working community, particularly in the north of England.

The success of industrial assurance in Great Britain was watched closely by insurance companies in the USA, at first with little enthusiasm. After prolonged arguments about the pros and cons of the matter, industrial insurance was eventually established in 1875 by the Prudential Friendly Society, later to become the Prudential Insurance Company of America. The initiative of the Prudential was soon to be followed by the Metropolitan Life Insurance Company of New York and the John Hancock Mutual Life Insurance Company of Boston, and thereafter the business snowballed.

Because of its inherent nature – a high occupational and class mortality coupled with high administrative costs relative to the small sums insured – industrial insurance is an expensive form of life cover. As a result efforts were made early in the 20th century to devise better methods of insuring the working population.

GROUP INSURANCE

These resulted in the introduction of a new and important form of life insurance, group life insurance, and the first plan was underwritten in 1911 by the Equitable Life Assurance Society of the United States. Group life insurance was the first major development in life insurance that was wholly a USA innovation. Today, with certain modifications, it still holds an important place in the insurance of working populations throughout the world. The principle of group insurance is that life cover is granted to all employees of a firm or industrial organization without the need for evidence of health, other than that they be gainfully employed at the inception of the scheme. Administrative expenses are consequently much less than for individual industrial or ordinary life insurance, and the saving more than compensates for the slightly higher mortality cost experienced in group life schemes.

As life business expanded, the demand for experienced actuaries increased, and the Institute of Actuaries was founded in 1848 to foster the interests of the profession and to lay down standards. The status of the members was elevated when a Royal Charter was granted to the Institute in 1884. The sister body in Scotland, the Faculty of Actuaries, was founded in 1856 and was granted a Royal Charter in 1868. With the encouragement, it is said, of the many Fellows of the Institute and Faculty who had emigrated from Great Britain to the USA, the Actuarial Society of America was founded in 1889 to be followed some 20 years later by a similar body, the American Institute of Actuaries, in 1909. These two professional

associations finally amalgamated in 1949 to become the Society of Actuaries.

In the earliest days of life assurance, it used to be sufficient for a candidate to appear before the board of directors, who assessed the candidate's health by their appearance. Later a physician was sometimes invited to sit with and advise the directors, but as the volume of life business grew the state of health of applicants began to assume more importance in selection, and gradually a system of medical examination was evolved. The practice seems to have been started in 1809 by the Pennsylvania Company for the Insurance of Lives, but it was not established in Great Britain until some time before the middle of the century.

In view of the special techniques involved in medical selection, various professional associations and societies were eventually formed by physicians having a special interest in life insurance medicine, in order that the medico-actuarial aspect of subjects bearing on their speciality could be discussed and experiences exchanged. Of these, the Association of Life Insurance Medical Directors of America (ALIMDA), founded 6 December 1889, is perhaps the most important and influential. The 34 medical directors representing 27 companies in 1889 grew to become 606 medical directors representing 363 companies and 46 branches in 1990, including physicians from Canada and other countries outside the USA. Since 1990 there has been some decrease in the number of North American medical director members and companies represented, because of company mergers and corporate downsizing in the search for the most effective ways to conduct insurance business. At its 100th annual meeting in October 1991, ALIMDA decided to change its name to the American Academy of Insurance Medicine (AAIM), to emphasize its educational mission and remove 'life' from the title to reflect the wider interest of insurance medicine in recent decades. Besides an annual meeting, at which scientific papers are read by speakers eminent both in the clinical and insurance fields, numerous committees and subcommittees of AAIM exist to deal with a wide variety of topics affecting the members, including professional and public relations, education, mortality and morbidity studies, and medical procedures relating to risk selection. The transactions of the annual meeting are published every year and distributed to the members. What started out as ALIMDA's 'Newsletter' in the 1960s has now developed into the much respected and informative *Journal of Insurance Medicine*, which, since 1992, has incorporated the transactions of the annual meeting.

The American Life Convention, founded in 1906, was the oldest international association of life insurance companies in the USA and three provinces of Canada. In 1973 it merged with the Life Insurance Association of America to become the American Life Insurance Association, the aims and purposes of the two bodies having been identical for many years. A further merger occurred in 1976, with the Institute of Life Insurance, the public relations arm of the industry, to form the American Council of Life Insurance (ACLI). The medical section holds annual meetings at various venues in North America at which papers having a bearing on life insurance medicine are read, and the proceedings are published annually. It also has committees that primarily address matters of industry and regulatory concern to insurance medicine. Of particular note in the past decade has been their attention to the impact of AIDS and genetic testing on insurance.

To be recognized as a valid medical specialty, insurance medicine needed to set standards covering the knowledge and experience required by those practising the discipline. ALIMDA addressed this in the 1960s by establishing the Board of Insurance Medicine (BIM) to create requirements for certification. Board certification requires a doctor to have spent at least 4 years working for an insurance company and passing a three-part examination covering insurance, medicine and medicine as applied to insurance, including mortality and morbidity methodologies. Certification by BIM is now expected for most senior medical directors employed in the USA. To help train those who practice insurance medicine BIM has held a triennial course for about 30 years, most recently in February 2003. The courses last a week and cover the subject in depth, partly by lectures but particularly in workshops; in addition to physicians the participants always include a few underwriters and others involved with insurance medicine. In the past decade BIM has supported

an introductory course in insurance medicine for doctors who have recently joined the industry. The course is held once or twice a year, in conjunction with insurance medical meetings in North America. Also, knowledge of insurance medicine benefited during the last 20 years from the improved content of programs at the annual meetings of AAIM and ACLI Medical Section; and in the past few years there have been three special meetings, on tumor markers, cancer and genetics, jointly sponsored by the two organizations.

In England, the Assurance Medical Society, founded in 1893, holds evening meetings three times a year in London, at which invited speakers read papers on subjects related to life and health insurance. Since 1985, the society has held biennial one-day medico-actuarial meetings in London jointly with the Institute of Actuaries, at which speakers from both professions are invited to address the fellows and members. In order to maintain a closer link with provincial members of the Society, one-day regional meetings are held annually at different venues of major insurance importance in the UK. These meetings are chaired by the president and are usually hosted by the local insurance company or companies. The speakers are normally drawn from among local physicians and chief medical officers. The proceedings of all these meetings are published annually in the transactions and distributed to members of the Society.

An international congress for life assurance medicine was held in Brussels in 1899, to be followed by three further congresses in different European venues. In 1931 there was a proposal to set up a permanent international committee and bureau to organize future congresses. This led to the first official International Congress for Life Assurance Medicine (ICLAM), held in London in July 1935. The aim of the organization is to promote international development and co-operation in insurance medicine. This is done in co-operation with the national insurance medical societies, mainly in the form of international congresses. The organization consists of an executive group, the Bureau, with eight members, and the Committee with representatives from 26 countries all over the world. During the congress in The Hague in 1989 it was decided to extend the Committee to cover disability and health insurance medicine. Five congresses have been held outside Europe: in Tel Aviv, Mexico City, Tokyo, Washington DC and Sydney. In 1992 the congress was held for the third time in London, and the most recent congress took place in Venice in 2004.

COINTRA (Co-opération Internationale pour les Assurances des Risques Aggravés), founded in 1927, is an organization comprising several insurance and reinsurance companies from various European countries; it was set up to exchange ideas and information about the experience of substandard risks accepted for life and permanent health insurance. Conferences are held every 3–5 years at various venues in Europe at which papers of medico-actuarial interest are presented both by member companies and by invited speakers of repute in the insurance world. The transactions of these conferences are published and distributed to members.

MEDICO-ACTUARIAL INVESTIGATIONS

Since the establishment of these and other professional associations, a greater unanimity of opinion has grown regarding features important in the selection of life risks, and a system of tabulating clinical data from the medical examination of applicants has gradually evolved. What started out as 'judgmental underwriting' became 'scientific underwriting' based on sound actuarial figures. The first results were obtained from simple population studies and so-called 'collective investigations'; however, this rapidly progressed to large occupational and medical impairment studies. The first medical data gathered were those most easily obtained and related to urinalysis. Routine urine testing of life insurance applicants, which was introduced at the end of the 19th century, came to be regarded as so important that rapid advances were made in techniques for the detection of protein and sugar. In fact it was in this sphere that life insurance made a valuable contribution to clinical medicine at the time.

In those years it was the infectious diseases like tuberculosis, pneumonia, syphilis and the epidemics such as influenza and bubonic plague that were of primary concern. However, interest

initially was focused on body build as a prognostic indicator, and work was completed on height and weight tables related to age and sex in 1897 and 1906; these were supplemented by tables published in the *Medico-Actuarial Mortality Investigation 1909–1912*.[3] Several further studies of build were carried out over the years culminating in the *Build Study 1979*.[4]

An equally important landmark was the introduction of sphygmomanometry early in the 20th century. The first instruments, which operated on the spring principle, were rather unreliable, but from these a more accurate aneroid sphygmomanometer was developed by Dr O H Rogers, medical director of the New York Life Insurance Company, his model being the prototype of the Tycos instrument in use today.

When the custom of recording blood pressures had become established in life insurance practice some time after World War I, it became evident that the level of blood pressure bore a direct relationship to mortality, the higher the blood pressure in a group the higher the mortality. Several large-scale medico-actuarial studies conducted in North America between 1925–79 have amply confirmed the findings.

These intercompany medico-actuarial investigations, beginning in 1909, were highly productive over the years and, besides build and blood pressure, covered many other major medical conditions as in the impairment studies of 1951 and 1983. In 1990 the second edition of *Medical Risks: Trends in Mortality by Age and Time Elapsed*[5] was published. This important work analyzed follow-up studies gleaned from the insurance, epidemiological and clinical literature of the world and presented them in a form suitable to the needs of the life insurance industry. In 1994 a further collection of more recent articles on mortality and morbidity methodology and some abstracts was published as *Medical Risks – 1991 Compend of Mortality and Morbidity*.[6]

Substandard insurance was slow to develop but was encouraged by the work of Oscar H Rogers and Arthur Hunter, medical director and actuary respectively of the New York Life Insurance Company, who devised a method of risk evaluation called the numerical rating system, which was described by them in a paper read to the ALIMDA and the Actuarial Society of America in 1919. This method of measuring risk is now used universally, and its application can be seen in the medical chapters of this book. Rogers was also instrumental in developing the Medical Information Bureau (MIB) which he directed from 1902–32. Most life insurance companies in North America subscribe to the MIB and feed factual information on substandard applicants into the system, which is kept highly confidential, and serves to protect member companies from fraud and the withholding of material information.

In the last half century, in addition to investigative and mortality studies, there has been much work done on the marketing of new insurance products. Beginning in the 1950s, the number of these products increased in a revolutionary fashion to include such things as group plans, sickness and accident policies, critical illness contracts (CIC) and long-term care (LTC) policies, split dollar plans, premium rates differing by sex and smoking habit, cost differential according to size of policy, structured settlements and others.

With the consolidating influence of national legislation from 1870 the business of life insurance has steadily grown, adapting itself to meet the current needs of the community, until today it is an important industry handling vast sums throughout the world. Life insurance has become a large source of personal savings in the western world, and a country's economy is assisted by the money that it provides to finance industrial expansion, new factories, government and municipal projects, and countless developments calling for fresh capital both at home and in the developing countries. From all of these a nation's standard of living benefits directly.

It is hoped that the years ahead will be no less adventurous, particularly from the standpoint of health and longevity. In the USA, death rates from the major cardiovascular diseases have already declined dramatically in the past years among persons of late middle age and older, and it is in this age group that exciting advances in the field of therapy might be expected to improve mortality in many other disease conditions, thus further extending expectation of life. Although the lifespan of man is still the same as it was in biblical times, the number surviving to reach 80–90 years is bound to

increase, bringing with it the social implications of age-related disablement and a reduction in quality of life. Associated with these efforts to increase longevity there will arise ethical and legislative matters that must be of concern to everyone; they too must be scrutinized closely, particularly in the areas of genetics and confidentiality.

LIFE INSURANCE: WHAT IS THE FUTURE?

The changing life insurance marketplace

North America

Since the fourth edition of *Medical Selection of Life Risks* was published in 1998, the pattern of change in the North American insurance industry has accelerated and intensified. These changes have been driven by a number of factors to be discussed below.

Since people have begun to live longer and to worry more about running out of money in retirement, many North Americans have started either to do without life insurance or to buy less. Instead, they have been pouring money into investments like mutual funds and variable annuities, which they hope will take them comfortably through their golden years.

Although this change in attitude has been building up gradually for years, it has recently reached a critical stage, sending life insurance sales tumbling resulting in changes in the way insurance companies do business.

Most large insurers still offer a basket of life insurance choices but they expect much of their growth to come from meeting the investment needs of the new generation of maturing teenagers and young adults. Struggling to cope with the new attitudes, the life insurance industry has been gradually remaking itself. The fastest growing companies are evolving into financial service companies operating more like financial product supermarkets. Many have even removed the word 'insurance' from their company name.

The competition for new and different business has driven insurers to cut costs, reorganise operations and look for merger and acquisition candidates. This convergence of financial services has resulted in a blurring of the distinction between financial institutions such as insurance companies and banks.

The North American life insurance market, although mature, remains huge with approximately 1500 companies still competing. It is also a fragmented market with the top 25 companies controlling a little less than 60% of new business. We can therefore expect further mergers as companies seek to take advantage of opportunities of scale, to capture a greater slice of the domestic market and to expand internationally. The need to raise significant amounts of capital and the same forces that have been pushing insurers towards financial services have created an environment of doubt about the basic structure of the mutual life insurer. This has resulted in a movement away from the traditional structure to the demutualized stock company. The conversions began slowly but soon gained momentum and included many of North America's largest mutuals – Equitable, Mutual of New York, John Hancock, Metropolitan Life, Prudential, ManuLife and Sun Life.

Sales of whole life policies have also suffered in North America because of law suits brought by millions of policyholders who maintained they had been misled by agents about how much coverage would actually cost.

One year after the terrorist attacks on 11 September, 2001, the insured losses were estimated to be about $49.2 billion. Of this total, 7% was represented by life insurance claims. Terrorism represents a severe new risk to society and individual insurers are only beginning to revise their risk management practices and products to account for this risk.

Consolidation has also occurred in the North American reinsurance industry with only 12 reinsurers remaining with a market share of 2% or more (down from 18% in 1995). Today, the top six account for 81% of the market and only one of the top six reinsurers is USA owned. Life reinsurance has been and will continue to be a high growth business. This is because while approximately 60% of new business is being reinsured, only about 25% of all business in force has been reinsured, and companies continue to reinsure an even greater percentage of their business. This concentration of reinsurance risk in a few

companies is of concern to medical directors. This is especially so when coupled with the concern that some companies may have under priced their products to remain competitive by factoring in anticipated future mortality improvements which may not materialise.

The new age of underwriting

Alternative methods of distribution, technological advances and entry into global markets are profoundly impacting the risk appraisal process. Communication, service delivery and distribution are being transformed in North America. This is being driven, in part, by the emergence of new entrants in the life insurance industry in the form of banks, retailers and asset managers. The new entrants are unencumbered by infrastructure, legacy systems and bureaucracy. Traditional life insurance companies are being forced to streamline their processes to compete on turnaround and service. Underwriting departments are under pressure to increase non-medical limits, reduce evidence costs, work faster and accept more business.

As business has become more competitive bottlenecks in the sales process such as the gathering of medical evidence, including the medical examination, are being re-evaluated. Companies are moving towards the use of alternative, cheaper and faster methods of gathering information and targeting the evidence more accurately by age, sex, product and to major causes of mortality such as cancer and heart disease. These traditional methods of risk assessment are being replaced by processes such as teleunderwriting where a telephone interview with the proposed insured takes place via the underwriter using a personal history interview (PHI) questionnaire which affirms and amplifies the application. Variations of this form are being used in the newer internet websites and laptop point of sales environment. There is also an increased use of prescribed drug profiles obtained from the databases of pharmacy managers. Although motor vehicle reports, paramedicals and lab profiles continue to flourish, use of other requirements such as chest x-rays, ECGs, stress tests and physical exams appear to be decreasing. The dominance of blood testing continues but there is increasing use of alternative fluids such as saliva and urine at younger ages.

Innovations in product development such as preferred risk coverage also are changing the North American insurance industry. Beginning as experimental programs in the mid-1980s as an outgrowth of smoker/non-smoker plans, these programs have developed dramatically in the past few years as companies began to refine and diversify their approaches to preferred risks. Some have added several levels of preferred status with more stringent criteria to qualify for the higher levels. Others have experimented with variations on this theme, such as 'preferred smokers'. A few have even begun extending preferred-risk eligibility to selected individuals taking antihypertensive or cholesterol-lowering medications, provided these drugs showed a definite benefit to the insured over a period of time. Accompanying these developments have been increasing pressures from the sales forces on underwriting departments to squeeze applicants into preferred categories, jeopardising pricing assumptions and mortality experience.

Legislative and regulatory issues

The North American insurance industry continues to be challenged by increasing legislative and regulatory initiatives to protect the consumer and regulate the market to control sales practices. The freedom to underwrite continues to be challenged. Increasingly, insurers are prohibited from pricing or selecting life insurance risks on an actuarially sound basis if this is perceived to be 'unfair' discrimination or to violate privacy or data protection legislation.

OTHER MARKETS

The position in the other developed markets in the world is similar to North America in many ways. Market consolidation amongst life insurers is advanced in many countries and new entrants are challenging the traditional processes and distribution methods which have underpinned the industry for a number of decades. Internet or call centre sales supported by algorithm based underwriting systems are beginning to gain a solid foothold in most markets. Some internet based distributors are beginning to flex their muscles and drive product differentiation using traditional insurers as manufacturers.

Market conduct issues also afflict many markets driven by mis-selling of investment products as evidenced by the pension and endowment mortgage issues in the UK. The steep fall in the value of shares from 2000 to 2003 further damaged consumer confidence in investment linked products, which have historically dominated many life insurers' sales figures.

As in North America vast numbers of policyholders claimed to have been misled by agents about the terms and conditions of the policies and brought costly law suits against the insurance companies. These actions are both helping to drive but also to block the consolidation process as companies look to exit the market and sell their insurance books, but the prices being asked are often unattractive to potential buyers because of the associated potential market conduct issues that would accompany the business.

The success of critical illness (CI) products in some markets is worthy of note, with significant volumes being sold either as a rider or stand alone benefit. Underwriting of the products has become more sophisticated but a shadow now looms over them with doubts over the sustainability of pricing, rate guarantees and definitions of the current product structure.

The profitability of disability business continues to be problematic in many markets with the number of disability insurers reducing leaving only those with significant critical mass who are willing to create the specialist underwriting and claims units necessary to write this product line successfully.

Legislative challenges to risk selection are found in many mature markets with the societal rights of the disabled and other minority groups being in direct conflict with the underwriting process, which by its very nature seeks to discriminate by selecting out applicants that do not meet the profile of healthy standard risks. These challenges require the data on which rating criteria are based in order to be up to date and for the methodology used to be able to withstand robust examination.

The genetic era is now upon us, with all the benefits and challenges this will bring. Society will determine who can access predictive genetic information and how it can be used. If the decisions taken do not maintain the balance of knowledge between insurers and applicants then the whole fabric of modern insurance markets will be damaged and the viability of some product lines threatened.

LIFE INSURANCE IN SOME OTHER COUNTRIES

Scandinavia

Hans Dunér

Life insurance was first introduced in Denmark in 1842, with the establishment in Copenhagen of Statsanstalten For Livsforsikring. In Norway life insurance was introduced through Norske Liv which was founded in 1844, in Sweden through Skandia which was founded in 1855, and in Finland through Kaleva, founded in 1874.

In the beginning a medical examination of the applicant was not an essential requirement. The principle was that only obviously healthy and well situated people were approved. The applicant had to appear in person before the general manager of the company for a check up. However, gradually there was a need for a more professional evaluation of the medical risks and medical officers were involved. As the number of life insurance companies increased there was a greater need for liaison and co-operation between them. The first life insurance congress in Scandinavia took place in Stockholm in 1885, followed by a congress in Kristiania (now known as Oslo) in 1893, and in Copenhagen in 1904. The Swedish Association of Medical Officers of Life Insurance Medicine was founded in 1906. There has been a high degree of co-ordination of medical risk evaluation in the Scandinavian countries. In fact, in Sweden all life insurance companies used the same life underwriting manual until July 1990. Competition in life business has also been restricted in Scandinavia in other respects, but changes are being implemented. For instance, the system of brokers is now quite common. Also, within the former strict limits for banking and insurance operations there is now a mutual shifting of traditional business focuses. Insurance products, such as unit-linked plans, which have already existed in other countries, were introduced in Sweden towards the end of 1990.

The Netherlands

H K de Raadt

The first insurance company to be established in the Netherlands was De Hollandsche Sociëteit van Levensverzekeringen in 1807. Initially this company only insured people of the upper strata of society. Consequently it resulted in a slow growth of approximately 4% on an annual basis. The total of amounts insured in 1810 amounted to approximately 1 million guilders, and in 1860 approximately 7 million guilders. In those days companies hardly paid attention to age and state of health. It was only in the second half of the 19th century that people got acquainted with actuarial techniques, which resulted in the introduction of so-called endowment and social insurances. A steady growth of the number of life insurance companies was visible. In 1890 there were already 70 life insurers with the total of capital sums insured amounting to 627 million guilders. The annual growth of 14% also attracted foreign companies; 51 by 1900.

In the 20th century the large insurers increasingly applied themselves to the wealthy part of the population and left the social insurances to others. To an increasing degree, differentiation of premium took place, not only according to age and type of insurance, but also to state of health. Medical advisers were attracted, and became organized into an Association in 1910. They made it clear to the insurers that almost everybody was insurable, provided that they could obtain enough data to calculate the risk.

In 1923 the Association of Medical Advisers joined the Nederlandse Vereniging ter Bevordering van het Levensverzekeringswezen (Dutch Association for Promoting the Life Insurance System), which was also joined by the mathematicians in 1925. However, both associations quietly disappeared from this co-ordinating association in 1942, due to the fact that their opinion increasingly deviated from that of the insurers; calculating increased premiums on actuarial and medical grounds is incompatible with the way of thinking of a purely commercially operating company.

Meanwhile the medical advisers of non-life insurers organized themselves in 1971. Many advisers were members of both organizations, which resulted in a merger in 1980. The Association now has 155 members; they meet at least four times a year to discuss test cases. Every meeting is chaired by one of the insurance companies. The Association also organizes a continuing education course for more than one day and, in 1991 for the first time, a basic course of 10 days. It is striving for a further specialization in order to gain an official recognition in the future.

Over the last few years the Association has increasingly stressed its distinctive features as a conversation partner for the government and insurers for the AIDS issue and genetic problems.

Belgium

P Lauwers

In Belgium the earliest records of some kind of life insurance go back as far as the 12th century. However, life insurance as it is known today started its development during the 19th century.

Group insurance began in about 1920, but its real boom began from about 1940–45 when its development was greatly encouraged by the introduction of tax advantages. A few years later, tax advantages were also applied to certain forms of individual life insurance, and since then the Belgian life insurance market has seen continuous development.

At present there are some 130 insurance companies, or groups of companies, in Belgium and approximately half of these are authorized to operate in the life branch. Composite insurers are permitted in Belgium.

Traditionally the life insurance market was tariff-based, ensuring uniform rates across most products; only a few companies offered lower rates, mainly in the group area. Since 1991, however, a process of liberalization has taken place. Pure risk products such as individual term insurance have proliferated and are subject to fierce price competition, spurred on to a significant degree by 'foreign' companies taking advantage of the European Union's freedom of services directives. In the mid-1990s group business development has been hampered by a government-imposed wage freeze in an attempt to curb inflation and

reduce the budget deficit in preparation for European monetary union; this also has led to price competition for all insurance-related employee benefits.

Life insurance still plays an important role in the country's economy, not least because of the enormous policy reserves which have been generated to date. Roughly speaking, the assets representing those reserves are invested: one third in government loans, one third in property and mortgage loans and one third in shares, bonds and other securities.

Life premium income amounts to about 100 billion francs; that is approximately 40% of the overall premium income of the Belgian insurance market.

Germany

Othard Raestrup

The insurance industry in Germany is broken down into the public and the private sectors. Social insurance and private insurance have always been separate, but have also complemented one another. A meaningful co-existence has now developed between them: basic care is provided by compulsory annuity insurance, which is augmented by company pension schemes and individual additions in the form of private life insurance. Whilst membership in the classes of insurance required by law is mandatory, with its structure reflecting that of the general population, life insurance is voluntary, which might mean that disproportionately more ailing persons with a reduced life expectancy take out life insurance. This is the reason why the practice of classifying risks, which is the responsibility of company medical officers, was introduced in Germany at the end of the 19th century.

By 1903 a department of insurance medicine was established in the German Association for Insurance Studies. The successful and experienced chairman of the annual conference was Professor Florschütz, whose pioneering research laid the foundation for life insurance medicine in Germany. The numerical rating system was developed as a basis for risk assessment. During World War II all work came to a halt, and it was not possible to re-establish the department until 1950. The main area of research, to which Dr Kaewel devoted particular effort, was aimed at improving risk assessment on the basis of insurance medical analyses of diseases, disease groups and combinations, collected by the Central Statistical Office of the Association of Life Insurance Companies. With the assistance of German reinsurance companies, an individual method of assessment of exposed risks was developed which is still being constantly refined today through attention to all diagnostic, therapeutic, prognostic and epidemiological progress in medical science. Research is funded by the Association of Life Insurance Companies, and the journal *Versicherungsmedizin*, which provides up-to-date information for physicians, is also widely read outside the insurance industry.

Switzerland

Karl Werlen

Compared with other European countries the development of life insurance in Switzerland came relatively late. In the environment of a largely agricultural economy and patriarchal system of society, living in small towns and villages, the natural demands for security could be achieved with risks being absorbed by the community, following the principle of the extended family, artisan groups and guilds. It was those communities which first engendered organizations of a mutual or self-aid nature.

In the first half of the 19th century, with the onset of the industrial revolution in Switzerland, there was growing demand for individual provision. First attempts at setting up life offices failed and two companies were unsuccessful: the Allgemeine Schweizerische for dependants, widows and pensions, which was established in 1840, and the Schweizerische National-Vorsichtskasse for provident funds, established in 1841. Nevertheless, demand grew and was satisfied by some 20 German, English and French life offices.

The Swiss constitution of 1848 set the stage for a general boom in the economy. A relatively loose federation of individual states was superseded by a tightly knit confederation. A common currency, unification of measures, a central postal system, the abolition of customs duties between the indi-

vidual states, and the development of a railway network created the necessary conditions for a positive development of the economy.

In 1857 the Schweizerische Lebensversicherungs-und Rentenanstalt (known today in English as the 'Swiss Life') was founded; it is still the largest Swiss life office. Then followed a spate of new life offices: La Suisse (1858), La Bâloise (1864), La Genevoise (1872), Pax (1876) and Patria (1881). In 1886 the first insurance supervisory act came into force, a law which was exemplary for other countries in continental Europe.

Following the collapse of the Swiss Life portfolios of some German insurers as a result of the German hyperinflation, some further local life companies were set up, for example VITA in 1922 and Winterthur Life in 1923, both subsidiaries of Accident Liability Insurers.

By 1991, 23 locally incorporated (of which a number are partly or wholly foreign owned) private life insurance companies were actively writing business; their premium income representing 57% of the total premium income of the private insurance industry in Switzerland.

Japan

Hiroshi Okamoto

The development of the life insurance industry in Japan has taken place within the context of larger historical trends. Japan's first life insurance company was established in 1881, just 14 years after Japan entered the completely new Meiji era. Efforts were made during this period to bring about the rapid modernization of Japan. It should be noted in particular that from the beginning company doctors were employed so that medical examinations could be done by qualified physicians. This played a major role in the advance of insurance medicine in Japan, and the first medical director, G Indoh, laid the foundations for the development which followed. Nevertheless, this was a time when there was insufficient statistical data for mortality rates, and so the difficulties involved were enormous. In 1901 the Association of Life Insurance Medicine of Japan (ALIMJA) was established. Its first president was T Nakahama, who left a legacy of many great accomplishments. Later, although Japan's insurance industry was significantly affected by the global economic turbulence of 1929, it continued its steady development. It seemed that both economically and culturally the country's foundation was firmly in place, but shortly afterwards Japan entered into a disastrous war.

After World War II Japan again entered a period of assimilation, but the wounds from the war were so great that until 1950 there were only ten lectures given at the Congress of Life Insurance Medicine of Japan. In 1950 the *Underwriting Manual* was published, a big step forward for numerical underwriting. During that same year the *Manual for Medical Examination* was published. In the post-war period, beginning in 1952, Japan has participated in the International Congress of Life Assurance Medicine (ICLAM).

From about 1955 the economy began to grow very quickly, and this also brought about rapid growth in the life insurance industry. Interaction with other scientific institutions also increased. From 1976 to 1979 joint research with the Japan National Railways (now known as JR) was undertaken into blood pressure. Since 1980 there has also been research with the Tokyo Women's Medical College into diabetes mellitus, as well as more recent research into ischemic heart disease. Over the last 10 years research into prognosis of the human life span has advanced with lightning speed. In 1986 the ICLAM was held in Tokyo. There is, in fact, much interaction between Japan, the USA and Europe, as well as many other countries.

In 1991 ALIMJA celebrated its 90th anniversary, which also marked the introduction of the authorized diplomate system. This enables physicians to be accredited with a diploma in insurance medicine after 5 years of special study of the subject. A new textbook of insurance medicine in the Japanese language was also published at the same time. ALIMJA has been a member of the Japan Medical Congress since 1981, and with the introduction of the authorized diplomate system, the Association has now become an increasingly well regarded institution both in terms of its reputation and actual personnel. Membership exceeded 1000 in 1990, and the *Journal of the Association of Life Insurance Medicine of Japan* is published periodically. The industry is indeed fortunate to have grown along with the expanding economy on a scale never before experienced in

Japan. However, it has been predicted that Japanese society will age increasingly rapidly, and therefore many challenges still lie ahead.

France

Jacques Chouty and Sean Roe

Life assurance in France was effectively created in 1787 by the inauguration of the Compagnie Royale d'Assurance by royal decree. Up until this date the principle of equating a life with a financial compensation was considered immoral, and this class of business was illegal. The judicial viewpoint was well summarized by Emerigon who declared that 'a human being has no price, and it is hateful to consider death a matter of mercantile speculation'. Having established a judicial base, commercial activities started in 1788, only to be curtailed by the Revolution of 1789. In the subsequent turbulent years, and throughout the reign of the emperor Napoléon, the Compagnie Royale d'Assurance remained dormant.

The arrival of Napoléon III brought a renewed enthusiasm for assurances of the person, and the legalization of life assurance contracts was effected once more during the years 1819 and 1820. This led to the creation of several life assurance companies, most important among them being La Nationale, La Compagnie d'Assurances Générales, L'Union, Le Phénix and La Paternale. The early policies offered were principally term assurance and whole of life contracts, and the industry grew progressively throughout the 19th century.

With the arrival of the 20th century came the 'collective' policies, initially covering industrial injuries only. After World War I Le Phénix developed the first group contracts, which quickly became popular with the other life assurance offices. This business continued to be very successful, and is still very important in France today, in particular the *groupe ouvert* (open group) concept. This is a mechanism for writing business on large numbers of people with common insurance needs, and the system affords various fiscal and administrative advantages.

In the early days of risk selection the poor quality of the medical information ensured that the only risks accepted were those evaluated at 'standard rates'. This situation improved steadily until World War II, in line with advances in medical science, particularly diagnostic and prognostic techniques. The war and its aftermath resulted in a dramatic increase in the understanding of the survival of impaired lives, and the post-war period also saw a number of important medical discoveries as well as great progress in disease control. Accordingly, medical selection became increasingly sophisticated, and more and more substandard risks were deemed acceptable. The translation of advances in medicine into sharper underwriting owes a lot to the *médecins conseils* (chief medical officers) of the time, and especially Dr Charles Gignoux of the reinsurance company Caisse Centrale de Réassurance, who was among the first to revolutionize the process in the post-war period. This era saw the role of the *médecins conseils* develop, as they created specialized underwriting departments in most life assurance companies during the 1950s. More recently the Association des Médecins Conseils en Assurancede Personnes (AMCAP) was established to provide an information forum for medical officers working in all areas of insurance of the person.

Today the French insurance market is the fifth largest in the world, and the last few years have seen a period of expansion, particularly in Europe. This internationalism is reflected in the life assurance industry where 160 companies, foreign as well as French, offer life policies, creating a very competitive market.

Hungary

Imré Horváth

The first insurance companies in Hungary were founded at the beginning of the 19th century by foreign enterprises. The legendary First Hungarian General Insurance Company was founded in 1857, and in 1864 its first medical director, Dr Géza Halász, delivered the inaugural lecture on life insurance medicine in the Academy of Sciences. This event is seen as the birth of Hungarian life insurance, and the presentation was published and used as the first Hungarian underwriting manual on medical risk selection.

Between the two World Wars there were more than 40 insurance companies operating in

Hungary, and in the 1930s nine of these companies also carried on sickness insurance successfully.

The development of the Hungarian insurance industry was halted in the early 1950s by the nationalization that followed World War II. During nearly four decades of monopoly control, the Hungarian insurance industry became an administrative part of the state budget, but despite the historical difficulties further underwriting manuals were published.

In 1986 prior to the later fundamental political changes, basic reforms were introduced into the Hungarian insurance sector. The insurance monopoly was eliminated by the government and new rules and regulations helped to form the legal environment of the insurance industry which gave preferential treatment to foreign investors.

Once again major European and multinational insurance companies (Allianz, Colonia, Generali, Nationale-Nederlanden, etc.) entered the Hungarian market. Fourteen insurance companies have been established in recent years, mainly during the 1990s, 13 of which are functioning as share companies with insignificant (or nil) state ownership, and have their own medical directors; the 14th company deals only with state (liability) insurance.

Participants in the reborn Hungarian insurance market established the Association of Hungarian Insurance Companies with professional committees, including a medical committee formed by the medical directors of the companies concerned. The Association publishes the *Biztosítási Szemle* (Insurance Review) which also contains clinical articles. The medical committee, in collaboration with the Hungarian postgraduate medical university, organized an expert qualifying course on insurance medicine in 1993 and a similar course of study for 1994 and the following years. Articles about this training course can be seen in *Biztosítási Szemle* and in the *Orvosi Hetilap* (Hungarian Medical Journal).

Celebrating the 130th anniversary of the establishment of our life insurance industry, a new edition of the manual on medical risk selection was published by the Hungaria Insurance Company, to be followed in 1995 by the publication of a specialist book of 580 pages and 29 chapters entitled *Life Assurance Medicine.*

In 1994 the Hungarian Society of Life Assurance Medicine was founded to promote the scientific basis of medical risk selection. The Society has organized two successful national congresses with international participation, and the most important achievement is that the 19th ICLAM will be held in Budapest in 1998 as an acknowledgement of the active work being carried out in the field of life insurance medicine in Hungary.

Australia

John Leydon

In 1827 Eagle Assurance opened an agency in Sydney, and in 1883, the Alliance British and Foreign Life and Fire Assurance Company opened agencies in Sydney and Hobart.

The first Australian insurance company, the Australian Fire General and Life Company, was founded in Sydney in 1836. In 1838 the Derwent and Tamar Assurance Company was the second life office to be formed in Australia, but its directors decided to discontinue life business in 1845, buying back policies.

The establishment of mutual societies was a major development in the Australian life industry with the entry in 1849 of the Australian Mutual Provident Society (AMP), which is still the largest life office in the country.

In the last quarter of the 19th century, Australia led the world in life insurance per head of population and in the liberalization of policy conditions.

The Life Insurance Act of Australia was introduced in 1945, which underpinned a long period of stability and conservative trading. The big six insurers (AMP, National Mutual of Australasia, MLC, T G Mutual, Colonial Mutual and City Mutual) held a combined market share of around 70% and were insulated from new competition by the dominance of their tied agency field force.

From 1975 and over the following decade significant changes occurred in the Australian life industry. There was a movement away from traditional policies (whole of life and endowment assurance) towards new types of policies such as investment linked and investment account business with the unbundling of contracts. Changes in government policy and retirement pensions, in-

come and assets encouraged innovation and new product design. There were changes in distribution methods as the stronger hold of the big six insurers disintegrated with the emergence of multi-agents.

The 1980s saw many companies scramble for market share with increased levels of competition as well as the deregulation of the banking sector in1983. An upshot of some questionable practices in the late 1980s was more stringent industry regulation. Ultimately, in 1995 the new and updated Life Insurance Act was introduced.

South Africa

Ivan Lockyer

The development of the life assurance industry in South Africa had its small beginnings in what was then known as the Cape Colony, with the arrival of the British settlers in 1820. Two British insurance offices, the United Empire and Continental Life, and the Allied British Foreign Fire and Life Company, began operations in the Cape Colony in 1829. Five years later the first local office, South African Life, was established.

The only life assurer established during the 19th century and still in operation is the South African Mutual Life Assurance Society. Founded in 1845 it is commonly known as Old Mutual and has grown to be Africa's largest life assurer. The second largest life assurer is the Suid-Afrikaanse Nasionale Lewensassuransie-maatskapy (SANLAM) which was founded in 1918.

The industry grew steadily and by 1926 there were nine local and 25 foreign life assurers in South Africa. In 1935 the Life Offices' Association (LOA) was formed, which has played a major role in advancing the industry and safeguarding the interests of life offices and policyholders alike. Political and social influences in the country during the 1950s limited the growth of the industry outside South Africa's borders and prevented the expansion to other continents. This all changed in 1992 when extensive political, social and economic changes within South Africa impacted favorably on the life industry. International restrictions on the country were lifted and the industry has grasped this newfound opportunity to expand and diversify internationally, thus opening up new markets and investment opportunities. Today there are some 37 life assurers, including six reassurers, operating in South Africa.

As an emerging country, South Africa is faced with many economic and developmental challenges as efforts are made to advance and uplift the broad spectrum of the population.

The advent of the AIDS virus has brought with it some dramatic economic, legal, social and psychological implications. This issue presents challenges to the industry, in developing products, in pre-testing and insuring clients with a shortened life expectancy, as it does to the country and medical profession, in managing the impact and seeking solutions.

The life industry in South Africa dominates the financial services sector, is highly innovative and has been responsible for the introduction of, amongst others, such concepts as dread disease (critical illness cover), terminally ill benefits, life cover for HIV-positive people and sophisticated preferred underwriting methods. The industry's proven resilience, flexibility and professionalism augers well for the future and reinforces its ability to flourish in a changing global environment.

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