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Disability Income Insurance, Part 1

A successful disability income product depends on a host of factors. Some involve traditional insurance variables such as product design, distribution, and claims management. Others are related to a country's general economic climate or concurrent changes in the national health care system. And some concern socio-demographic variables such as population aging and loss of the stigma associated with work-related disability. This issue of *Risk Insights* is the first of a two-part series to address how these and other factors influence the profitability of disability income insurance. The current issue emphasizes the importance of claims management.

Group Long-Term Disability Insurance in the United States: At a Crossroads

Robert Taylor, CLU, CEBS
John Hewitt & Associates, Inc.

Some professionals in the group disability insurance industry have referred to the 1980s as the "golden era" of Long Term Disability (LTD): double-digit premium growth, rapid product development, expanding markets, growing interest in selling disability insurance among intermediaries, and sustained high profit margins. Times were certainly good for the LTD insurers in the '80s. The "product-driven" approach to generating rapid sales growth—the preferred marketing strategy for the insurance industry—proved fruitful for this burgeoning employee benefit.

As the disability business entered the 1990s, however, the tide began to change. By the middle of the decade, the majority of the insurers were struggling. The preoccupation with sales growth had driven the industry toward more creative

pricing tactics, particularly as product innovation began to wane. Unwittingly the industry was leading the LTD product toward greater commoditization. These industry "behaviors" converged with a series of untimely external influences, culminating in serious profit problems. In essence, the industry had created its own "perfect storm."

The aftermath of this "storm" found the industry immediately reacting to address the profit problems: raising rates, tightening underwriting, investing in claims management skills, and restructuring contracts. The short-term results from these actions were positive. More important, however, the industry was setting the stage for a major transformation that will lead to a redefinition of marketing strategies, products and services offered, risk management skills, and distribution systems. The industry was realizing the need to become market-driven.

As challenging as this redefinition process is to a staid and somewhat parochial industry, new and exciting opportunities for profitable growth are certain to emerge. Keep in mind that the majority of U.S. workers still do not have disability insurance today (Exhibit A). New products and marketing approaches are needed to capitalize on this under-penetrated market.

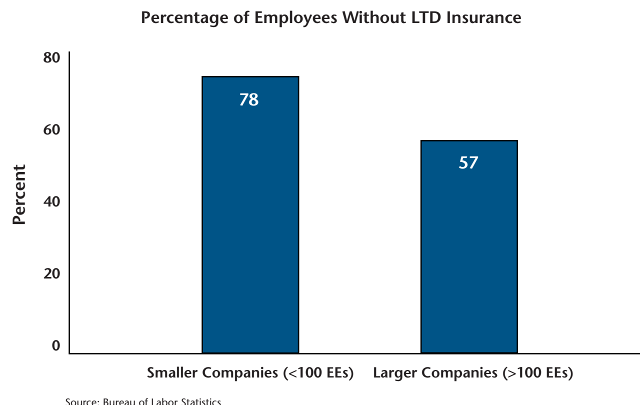
To be sure, this transformation is still in its infancy; however, change is coming at increasing speed. The innovative insurers who quickly embrace market-driven approaches to meeting the changing disability needs of the employer and employee markets will reap the reward of profitable growth in this competitive and complex business.

Risk Insights is now available online. View and download all issues via the Internet in a handy, searchable format.

Drawing on GeneralCologne Re's expertise across six continents, *Risk Insights* has become a respected source of information for life and health insurance professionals. Topics explored to date include pricing, product design, underwriting, and claims perspectives related to bancassurance, disability income/permanent health insurance, dread disease/critical illness insurance, financial risk management, health insurance, integrated benefits, long-term care insurance, and various medical, technology, and industry issues.

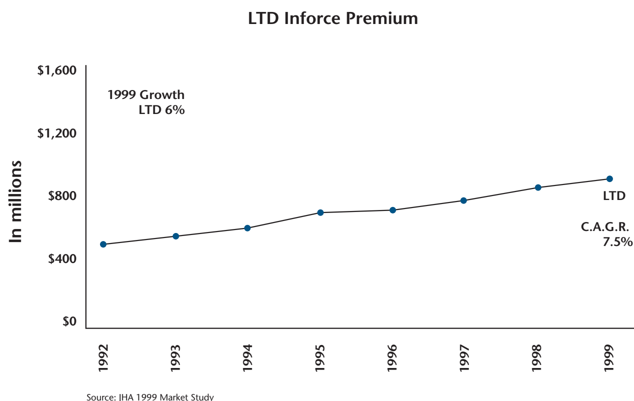
To access *Risk Insights*, select "Publications" from the GeneralCologne Re homepage at www.gcre.com. Please stop by soon.

Exhibit A



Taking a closer look at the industry behaviors and external forces that came together to impact the disability business in the 1990s can provide valuable lessons as the industry prepares for this new decade of challenge and opportunity.

Exhibit B



Slow Market and Customer Growth

While the industry was focusing primarily on growing top line revenue through aggressive sales, the marketplace wasn't offering up a host of new buyers anxious to purchase traditional disability products through existing channels. The LTD market was only growing about 8% a year (Exhibit B) while most insurers, particularly the industry leaders, were targeting an annual growth rate in the 15% range. The sales strategies of most insurers focused on capturing existing business as opposed to creating new demand among first-time buyers. This lack of organic growth created havoc with the industry as premium persistency levels plummeted to below 85%, from highs of 90% to 94% in the 1980s (Exhibit C).

Exhibit C

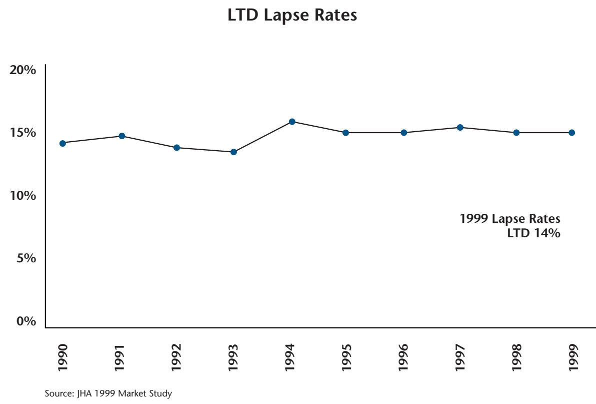
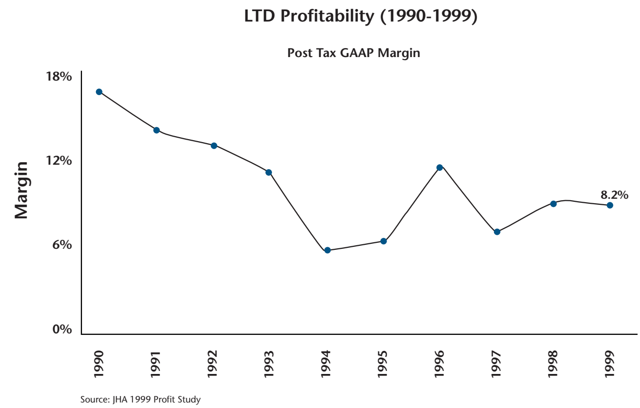


Exhibit D



Price-Driven Sales Strategies

The aggressive appetite for revenue growth combined with sluggish market demand in the early and mid-'90s caused the industry to migrate toward price-driven strategies to generate sales, particularly as product innovation slowed. When product-driven strategies are the principal growth engine, downward price pressure often occurs in the wake of slowing product development. This is generally the beginning of commoditization. The independent and fragmented intermediary channel, used to distribute disability insurance products in the U.S., was more than willing to accept the price-driven sales strategies being employed by the disability insurance industry. Ironically, of all the insurance products distributed in the U.S., disability is the least characteristic of a commodity.

Declining Margins and Inadequate ROE

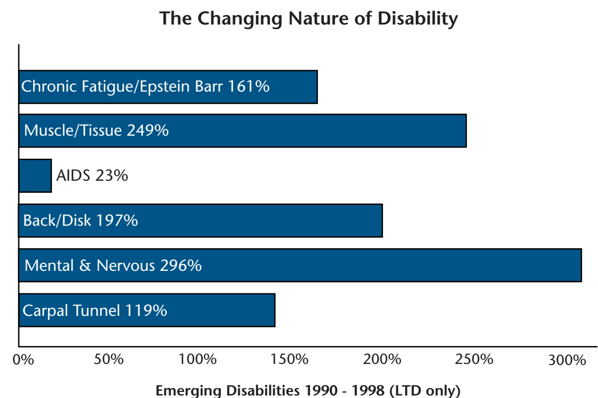
The focus on growing revenue through aggressive sales caused the industry to lower prices, as well as take its watchful eye off the consequences of selling risky plan designs and product features. An interesting dynamic of LTD is that the "cost of goods sold" is not known, in many cases, for years after the product is sold. The poor results generated by the plan designs and product innovations sold in the 1980s were starting to manifest in the early and mid-'90s. Liberal definitions of disability, high maximum benefits, less restrictive preexisting condition clauses, and high after-tax replacement ratios were some of the features that began to negatively impact the industry. Decreasing interest rates and a rising incidence of claims were also contributing to declining profits (Exhibit D). More important, the industry was generating inadequate return on equity in this capital-intensive business. By 1994, two-thirds of the industry was losing money in the group disability business.

While the industry remained focused on achieving revenue growth, external forces were beginning to play an increasingly significant role in the performance of the disability market. Arguably, the disability business is more influenced by external forces than any other insurance sector. The industry, however, wasn't fully cognizant of the changing dynamics of these types of factors in the 1980s and early 1990s. Let's take a closer look at some of the more prominent external factors that impacted the industry during the last decade, and in many respects, are still impacting the industry today.

New Disabilities and Changing Attitudes about Being Disabled

During the 1990s there was rapid growth of new and different types of disabilities, many of which the industry was not prepared to effectively manage. These included such conditions as chronic fatigue, work-related stress, substance abuse, repetitive motion injury, and sick building syndrome (Exhibit E). Additionally, attitudes about disabled employees were changing in our society. No longer was there a stigma correlated with being disabled. In many situations these new types of disabilities and attitudes had not been adequately factored into the pricing structure of the LTD products sold.

Exhibit E



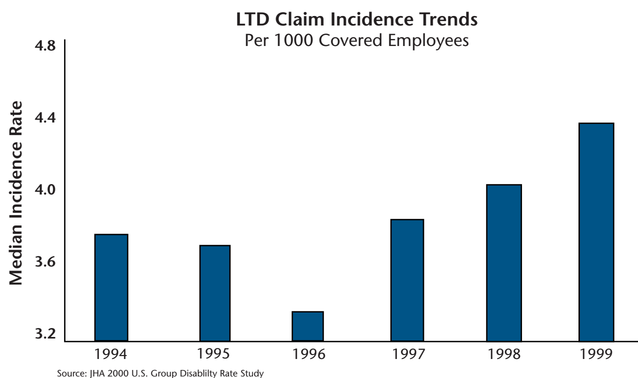
Health Care Reform

The movement toward managed care in the U.S. during the 1980s drove many insurance carriers out of the indemnity medical business. These carriers, seeking to replace lost medical premium, migrated to the disability business. Likewise, many insurance intermediaries, looking to replace reduced commission income from declining medical premium, started selling disability products. This created increased competition in an already competitive marketplace. Another outcome of health care reform in the United States that impacted LTD was the growing disenchantment among physicians with the new managed care environment. This disenchantment coupled with the rich plan designs sold so aggressively in the 1980s resulted in a significant increase in disability claims among physicians in the 1990s.

Business Restructuring

Disability has historically been negatively affected by layoffs and worker displacement. Even though the U.S. unemployment rate in the 1990s remained at historic lows, there was an inordinate amount of downsizing and worker displacement caused by unprecedented mergers and acquisitions. As the new U.S. economy rapidly transitioned from a manufacturing to a service base, many displaced older employees found it difficult to learn new skills later in their careers. Disability was increasingly viewed as an alternative to returning to work. Additionally, the growing pressure by employers for productivity gains was creating increased stress on employees. This robust business environment, while positive for most industries, was having some negative consequences on the LTD business. Incidence of disability claims continued to rise (Exhibit F) throughout the '90s and claim termination rates did not experience a corresponding increase.

Exhibit F

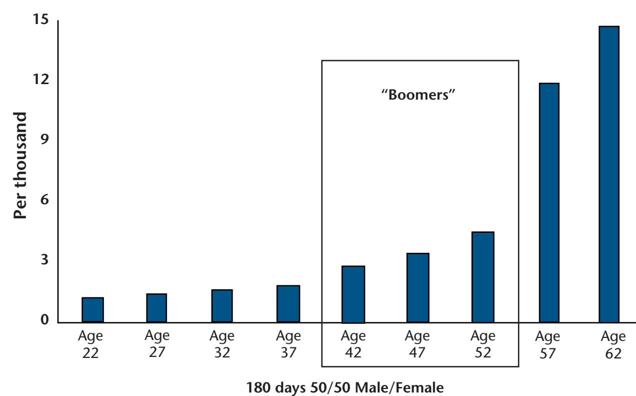


Unfavorable Economic Climate

From an economic perspective, the 1990s was a period of unprecedented growth and prosperity. However, LTD is a capital-intensive business with a "long tail" of liability that relies heavily on long-term investment return. Insurers discount long-term disability reserves, using reasonable interest assumptions, to determine current pricing and predict future profits. With declining interest rates, the impact on the insurance industry was profound.

The 1990s was also a period of low wage inflation in the U.S. While good for the general economic climate, low wage inflation provides a double hit for the disability insurance industry. First, disability claimants do not lose purchasing power as quickly and, therefore, have less economic motivation to find their way back to work. Second, low wage inflation means smaller increases in LTD premiums, which are derived from a rating factor tied directly to the wages of covered employees.

Exhibit G



Changing Demographics

The U.S. workforce in the 1990s, influenced primarily by the baby boomer bubble, was beginning to show its age. An older workforce is more prone to disability (Exhibit G) and more difficult to return to work. As a matter of fact, premiums for disability insurance in the 1990s should have increased 10% to 12% just to account for the natural aging of the workforce. However, this did not happen due to competitive pressures.

Another demographic influence during the '90s was the growing number of dual-income families. By the middle of the decade, almost three-quarters of all U.S. households had two wage earners. When one wage earner goes out on disability, taking into account the leverage of the income tax system, the loss of purchasing power for that family is less significant and therefore creates less incentive to return to work. Demographic changes were beginning to influence disability to a far greater extent than in the past.

A New Era for LTD

Clearly the 1990s was a challenging and, in some respects, discouraging time for the disability insurance industry in the United States. But, this resilient industry is learning to manage, in a more disciplined way, the complexities and volatility of this business. The lessons learned during this period have set the stage for the industry to initiate change and capitalize more readily on untapped and new market opportunities. As we enter this new era of LTD, there are several emerging dynamics that will profoundly impact the disability business in the future, testing its willingness to think and act differently. Let's explore three of these critical market dynamics.

The Changing Workforce

The changing profile of the worker and the workplace will have a dramatic impact on the composition of the employee benefits offered and how they are delivered. The worker of the future will be more independent, informed and demanding. Customization for the individual will be the standard for all employee benefits, including disability. This will require disability insurance carriers to overhaul outdated information and data management systems to more effectively and efficiently manage risk and administer individualized benefits.

Disability insurers that have relied on clear definitions of eligible employees and employers will find those traditional eligibility models becoming obsolete. Non-standard work schedules and work environments will be more common. The shrinking skilled labor force will require employers, and therefore insurers, to meet benefit needs in new ways. Globalization will bring together employees from all over the world into virtual organizations. New affinity groups will emerge that expand beyond traditionally defined employer groups. Senior employees, in their 70s, 80s and 90s, will continue to work and therefore demand access to disability benefits and services. Anyone earning a living will have a justifiable need for income protection products.

The "new age" worker will require the insurance industry to create innovative risk selection methods, new product designs, sophisticated risk management skills, and multiple channels of distribution to deliver and administer these programs. Traditional product forms that have served the disability insurance industry so well for so long will not be acceptable to the worker of the future.

The needs and demands of these workers will be broader and more complex. They might involve such things as disability preventive services, customized rehabilitation and retraining programs, behavioral health services, long term care benefits, asset protection programs, and supplements to accumulation products. For sure, the "old" model of neatly defined industry segments, tightly controlled underwriting guidelines, and standardized "one size fits most" products will not meet the new demands for disability insurance products from this changing workforce.

Medical Technology

As advances in medical technology accelerate at a mind-boggling pace, trying to anticipate the impact of these advances on disability insurance is staggering. On the positive side, how will genetic engineering, new medical procedures, and new drugs help workers stay productive or return to productive work more quickly? Will diagnostic procedures be accessible to all workers to prevent the onset of disabling conditions such as stress, heart disease and cancer? Some experts have pegged the direct and indirect cost of disability in the U.S. in excess of $300 billion, about 9% of payroll. Small, incremental improvements in reducing the total cost of disability can pay huge dividends for U.S. businesses. How can the disability industry best capitalize on advances in medical technology to reduce the overall cost of disability?

Certainly the rapid advancement of medical technology in the U.S. has had many positive effects, including significantly improving the mortality rate in this country. However, there tends to be a corresponding increase in morbidity as mortality improves. While people may be living longer, more may be living with disabilities. The inherent conflict that exists between achieving medical cost-containment and investing in medical care to return disabled workers quickly to productive employment, remains a challenge for our society. How this balancing act plays out will have a significant impact on the future cost of disability.

The Power of the Internet

The Internet is profoundly changing every aspect of our personal and business lives. The purchase and administration of employee benefits is just beginning to feel the tremendous impact of the Internet revolution. The sudden appearance of myriad information managers, aggregators, and dot.com companies trying to capitalize on opportunities to reinvent benefit administration, a continuous source of problems for the insurance industry, has caught the industry somewhat off guard. Insurance companies and new Internet players are scurrying to form alliances. Most of these have yet to be tested and, certainly, many will not succeed.

It's safe to bet, however, that the paper world that has so dominated the benefits business in the past will become obsolete in the very near future. The Internet will be the vehicle for administering all aspects of disability programs, including underwriting, policy administration, claim management, and customer service. The Internet will finally allow the insurance industry to "touch" the ultimate customer, the employee.

Some have predicted that the Internet will ultimately replace insurance intermediaries in the distribution of employee benefit and other insurance products. This may be true for insurance products and services that can be relegated to "commodity status," but it is highly doubtful it will apply to disability products. After all, the determination of whether an individual is disabled or not is the most subjective of all decisions that are made in the insurance world. The adjudication of disability is a complex, subjective and, often, confusing process. Consumers need to fully understand the intricacies of this process and, therefore, will continue to rely on the personalized approach to purchasing these types of products and services.

The Internet will dramatically change the dynamics of how disability risk will be underwritten and managed in the future. Underwriters will have quick and reliable access to disability trends, prospect information, market data and industry benchmarks. Pricing, a source of great confusion in the marketplace, will finally reach a level of more precision and consistency. Claim risk management will reach a new level in sophistication, communication and in-depth adjudication. The disability business is knowledge-based. The Internet will be the critical tool for enhancing that knowledge base, allowing professionals within the industry to master the "science of disability." The Internet will help reduce today's widening gap between the knowledge base in the industry and the growing complexity and sophistication of the disability business.

The Industry at a Crossroads

When we step back and reflect on how far the U.S. disability business has come in such a short period of time, it creates a tremendous amount of anticipation about the prospects that lay ahead. The disability insurance business has recently emerged from a troubling period only to become stronger and more willing to adapt to a dynamic and changing marketplace. The industry is clearly at a crossroads; each disability insurer must decide which path to pursue. Some will hold on to the traditional, product-driven approach, making incremental changes to their current systems and processes as they try to react to changes in the marketplace. Others will embrace a market-driven approach to capitalize on the changing demands of the new workforce and on the power of the Internet to acquire new, sophisticated risk management skills. Making such a bold change is not easy for an industry steeped in tradition. However, those who choose the path of tradition may be headed toward extinction, while those choosing a market-driven approach will be better positioned to prosper in the future.

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COMET Expands Educational Programme and Training Locations

Peter Crelinsten, MD
GeneralCologne Re, Singapore

COMET (Commitment to Ongoing Medical Education and Training) was established in July 1997 to provide Asian-based educational opportunities for life and health insurance underwriters and claims officers. COMET focuses on enhancing medical knowledge and the practical application of underwriting principles. The intent is to ensure that business is written using sound risk evaluation, enhance consistency of underwriting decisions, reduce new business acquisition costs, encourage increased business levels, and familiarise the industry with current underwriting issues.

Now entering its fourth year, this training programme is being expanded for the recent opening of the life insurance market in India, with modules to be held for the first time in New Delhi and Mumbai. The programme includes the following elements:

- Modules which consist of five half-day sessions, each session dealing with specific medical topics such as hypertension, diabetes, interpretation of ECGs and other diagnostic tests, asthma, and hepatitis, followed by case studies. Six different modules are presented. Sessions are held in Beijing, Guangzhou, Hong Kong, Kuala Lumpur, Mumbai, New Delhi, Shanghai, Singapore, Sydney, Taipei and Cologne. The accompanying table lists the sites where COMET will be held in 2001.
- Module of Anatomy and Physiology (“MAP”) provides elementary instruction on anatomy and physiology. This module is suitable for all insurance personnel who would benefit from a knowledge of medical terminology, not just underwriters.
- COMET ReView is a “case-of-the-month” concept. Each month a case is mailed to participants, it is underwritten and returned to GeneralCologne Re, and an analysis of the case is included in the next month’s mailing.
- COMET ReSearch is issued every four months. This is a collection of information from the world’s medical literature that concerns life and health insurance underwriting. After reading the material, participants complete a multiple choice questionnaire and return it to GeneralCologne Re for assessment. COMET ReView and COMET ReSearch have participants from all countries where modules are conducted, as well as from Fiji, Indonesia, Korea, New Zealand, the Philippines, and Vietnam.

2001 schedule of COMET modules

Month	Location
January	Singapore
February	Taipei Mumbai Hong Kong Kuala Lumpur
March	Shanghai Hong Kong Guangzhou
April	Cologne
May	Sydney New Delhi Mumbai
June	Singapore Taipei
July	Kuala Lumpur Singapore
August	Hong Kong Guangzhou Beijing
September	Singapore Mumbai Hong Kong Shanghai
October	Sydney
November	Cologne
December	Kuala Lumpur Taipei

More than 800 people from over 125 companies in the Asia-Pacific region are currently enrolled in COMET. European insurers also participate in COMET ReView and COMET ReSearch, as well as in educational modules held in Cologne. For additional information regarding COMET in the Asia-Pacific region, please contact Dr. Peter Crelinsten (pcrelin@gcre.com) or Dr. Fajah Peshi (fpeshi@gcre.com), and in Europe, Marianne Kutzner (kutzner@gcre.com).

Dr. Peter Crelinsten, *based in Singapore, works as the Regional Medical Director of GeneralCologne Re in Southeast Asia. He manages COMET - "Commitment to Ongoing Medical Education and Training", which is GeneralCologne Re's training program for Life underwriters.*

Financial Performance of Disability Products is Significantly Improved by New Product Design and Enhanced Claims Management

Sharon Coetzee, B.Occ Ther.
Peter Temple, B.Bus Sci.
San-Marié Crause, B.Bus Sci.
GeneralCologne Re, South Africa

In the late 1980s and early 1990s, direct insurers in South Africa were experiencing significant losses on their disability business. Losses of 30% of net premiums were not uncommon. Initially, many insurers were unaware of these losses because the risk business was packaged and sold with the investment business. The profitable investment fees received from clients concealed the losses on the disability business. However, in the early 90s, employers started separating the disability risk and the investment business, and the losses became apparent.

There were various factors contributing to the unprofitable situation. A depressed economy and increasing pressure to become globally competitive, with resultant downsizing and retrenchments, encouraged employers and employees alike to utilise the disability route as an alternative. Employers wanted to be seen as humane and, with pressure being brought by strong labour unions, found it preferable to provide guaranteed disability income to the employee if it was available. Employers also believed that the use of disability benefits was cheaper than redundancy because the costs were shifted to the insurer. They did not appreciate that the poor experience would eventually lead to increases in their insurance premiums.

Historically, insurers had relied on the honesty and judgement of medical practitioners when it came to assessing the validity of disability claims. Claims assessors were essentially administrators with little experience in this line of insurance; they tended to accept the recommendations of the claimant's personal medical practitioner without question. Medical practitioners were of the opinion that they had sole responsibility for deciding the outcome of a disability application. Furthermore, most insurers did not invest resources in claims management, viewing it as mainly an administrative function rather than a risk management role. Once a claim was accepted, no active management was done and the benefit was virtually guaranteed until retirement or death.

During this time, disability products were not appropriately structured. The definition of disability was loosely

worded and even the contractual wording was often inadequate. Benefit payments were generous in relation to the employee's salary, with replacement ratios of 100%. No return to work incentives were found in the products. The outcome of this was that the termination rates experienced on disability income business were much lower than anticipated in the pricing bases.

These factors combined to create an unprofitable line of business for insurers that needed to be changed. More progressive insurers started investigating the causes of the problem and identified two unfavourable factors: the claims assessment and management process, and the design of the disability products.

Solutions

Insurers realised that qualified claims assessors were needed. A good claims assessor would have sufficient medical knowledge to question the recommendations made by medical practitioners and to investigate each claim thoroughly. Insurers also realised that the process did not end when a claim was accepted, and that active and ongoing management of the claim after admission was essential. To fulfil this role, the claims assessor would have to be a health professional with an understanding of disability and rehabilitation, as well as specialised knowledge in the field of functional impairment. This led to various insurers appointing occupational therapists to assist with claims management, and this brought about some of the changes that were needed.

To address the issue of poor product design, extensive research was conducted and the disability products were revamped. The South African legislative environment was also experiencing changes and new disability products were tailored to help employers meet their obligations to disabled employees. The key objective—to achieve improved claims experience—was always kept in mind.

Enhanced Claims Management

Claims were investigated more thoroughly from their inception and it became standard practice to request an independent medical report from the appropriate specialist. Private occupational therapists were utilised and asked to assess the functional implications of the medical condition, with particular emphasis on the ability to work.

Once claims were found to be valid, it was necessary to explain to all parties that a disability income benefit was not guaranteed, but was subject to ongoing review. The definition of disability in traditional disability products changed after 24 months from "own occupation" to "own or any alternative occupation." However, very few intermediaries, employers or claimants were aware of this provision because the contract language had seldom been applied stringently. Statements from the insurer, advising claimants to prepare themselves for the change of definition, were initially not well received.

A natural progression of this was that insurers became involved in active rehabilitation of claimants to a lesser or greater degree. In some instances this was necessary because no attempts at rehabilitation would have been made without the insurer's intervention. South Africa was not consumer orientated in the mid-1990s and a large percentage of the insured workforce was less educated. As a result of this lack of awareness of consumer rights and a shortage of medical treatment and resources, many claimants with treatable conditions missed out on basic medical care and/or rehabilitation. Often a minor intervention at minimal cost was all that was required to enable a claimant to return to work. Some insurers chose to utilise independent health professionals to facilitate treatment after the claims assessor made a recommendation. Other insurers opted to control the process more actively by appointing internal rehabilitation experts to co-ordinate and plan rehabilitation and monitor progress on appropriate cases.

Through active intervention, claims assessors built relationships with their clients, mostly employers or labour unions, and the management of disability claims became a collaboration between the parties. As these relationships developed, employers began to realise that using their disability insurance was not an efficient or cost-effective way to deal with retrenchments. Claims assessors became more actively involved in helping their clients select the correct product for the workforce and circumstances. Workplace visits and job analysis became commonplace, thus ensuring that claims assessors had a realistic view of what each job entailed. In this way, recommendations specific to that workplace could be made and appropriate cases referred for rehabilitation.

Changes in labour legislation in South Africa have been slow in coming but legislation now protects the rights of disabled employees. Insurers are hoping this will benefit disabled employees who would like to return to work in an alternative position. Since unemployment is very high, it is very difficult for the disabled to find employment, and the best chance of success is returning the disabled employee to his/her previous employer in an adapted or alternative position. This is the main focus of rehabilitation at present.

It is encouraging to note the changes in attitude of all the involved parties over the past five years. Intermediaries are encouraging insurers to have direct contact with their clients as they realise that solutions need to be customised for each fund. Employers are becoming aware of their obligations towards disabled employees and many employers are trying to be proactive by selecting the appropriate products for their situation, actively educating employees regarding benefits, and preventing permanent disability by involving the insurer's rehabilitation experts early on in the process. Employees are also becoming involved in the benefit decisions. Such decisions must be seen as fair

and reasonable. Both employers and employees have become more supportive of the decisions made by the insurer, especially if they are satisfied that the insurer is working in everyone's best interests, namely, paying legitimate claims but refusing invalid claims.

Product design

Insurers have realised that product design needs to be flexible and the changing environment has led to the development of innovative new products. One such product has been designed to make provision for rehabilitation. Some of the major shortcomings of earlier disability income products were addressed in the redesign process. One of these shortcomings was the fact that if a claimant refused to undergo reasonable medical treatment that would lead to him/her no longer being disabled, there was no way to enforce this and the insurer would continue paying the benefit until retirement or death. Another factor discouraging return to work was the 24-month initial period covering the inability of the claimant to perform his/her own occupation. Once claimants were aware that the benefit was valid for a full 24 months, their attitude towards rehabilitation and actively seeking alternative employment changed. They felt there was more than enough time to start doing something "later." As research has proven, once a claimant is off work longer than six months, it is very difficult to get them back to work again.

The new disability income benefit products have been designed with the above in mind. The initial payment period is shorter, often only 12 months, and claimants are obligated to undergo reasonable medical treatment if the benefit is to continue. The benefits make allowance for partial disability from the outset and employees are encouraged to remain at work whilst undergoing rehabilitation. Some insurers have added an incentive for employers to accommodate the disabled employee.

About 17.5% of the South African population currently has health insurance; the remainder rely on government-financed hospitals and medical care. Medical treatment in the state sector is limited and there are restrictions with respect to medications and access to specialised services. Waiting periods are lengthy and often only emergency surgery is done. In some regions, budget restraints are so restrictive that elective procedures, such as corneal grafts and hip replacement surgery, have not been performed for a number of years. Insurers have had to make allowances for this, and have tailored their benefits to take into account these environmental factors. New legislation has recently come into effect that may limit the ability of insurers to cover medical expenses aimed at achieving rehabilitation, and disability products providing such rehabilitation benefits may have to be changed again in the near future.

The new generation of products has been moderately successful. Some employers have accepted the newer product but have no actual intention to accommodate disabled employees in the workplace. The benefit serves as "window-dressing" and shows the employer's "commitment" to the workforce. It enables an employer to say that they are complying with legislation and the Code of Good Practice, while in reality they are shifting responsibility for the disabled employee to the insurer.

A very small percentage of disability claimants are found to be suitable for rehabilitation. Factors that are considered when assessing the viability of rehabilitation are age, educational level, proximity to rehabilitation and training facilities, previous work experience, and of course, motivation to work. Approximately 5% of all disability claimants receiving a monthly income benefit are considered for rehabilitation and of these, 5% are successfully rehabilitated. Although the figures are low, the savings are substantial and the expenditure per claimant is low. The average reserve value released per claimant rehabilitated is at least 10 times the costs spent on rehabilitation. Although the rehabilitation process is fairly labour intensive, insurers have found it to be cost-effective and are pursuing it. Few statistics are available from insurers as rehabilitation has only been implemented in the last three years, but the initial results are promising.

Conclusion

The new products and the enhanced disability management process have resulted in a dramatic financial turnaround for insurers with regards to disability income business. Despite the growing AIDS epidemic in South Africa, disability business has been profitable for most insurers for the past 5 years. Insurers that were experiencing losses of 30% of net premiums are now experiencing profits of up to 25% of net premiums. In the past, a strong correlation between the economic cycle and the profitability of disability business could be seen, but insurers are now confident that this correlation will end because of improved claims management and enhanced product design.

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Income Protection Experience in the UK Market—Recovery at Last?

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In common with other markets around the world, particularly Australia and the United States, claims experience of income protection (IP) insurers in the UK has been poor. IP insurance (also known as disability income insurance or permanent health insurance) is a difficult risk for insurers to manage profitably. The focus of this article is the individual IP market in the UK. The article reviews the reasons for poor experience in the past, considers the actions taken by insurers to remedy the situation, looks at recently published industry claims data regarding the effectiveness of these actions, and concludes with an outlook for the future.

History of the UK Market

IP insurance has been available in the UK for over one hundred years. The policies have changed a lot during this time. A typical IP policy currently being sold has the following features:

- benefits payable if the insured is totally unable, by reason of sickness or accident, to perform the duties of his/her own occupation, and is not currently employed;
- benefits payable to a maximum age of 60 or 65;
- a maximum benefit of 50% of gross pre-disability earnings is payable;
- the policyholder does not pay taxes on the benefits;
- benefits received from other sources are offset against IP benefits;
- a choice of deferred periods is available: 4 weeks, 13 weeks, and 26 weeks are the most common;
- applicants are fully underwritten, with substandard cases being either rated or issued with exclusion clauses;
- occupation is a key rating factor. Insurers generally use four rating classes depending on the level of disability risk, e.g., Class 1 would include accountants and actuaries, and Class 4 would include manual laborers; and
- premium rates are often guaranteed.

For many years, UK insurers concentrated on selling insurance products with significant savings components, the most important being pensions and other retirement vehicles, with-profit endowments, and unit trust (mutual fund) products. Protection products, such as term insurance or IP policies, were often perceived as secondary lines. As long as IP policies were not overtly unprofitable, insurers were happy to put relatively little effort into developing the product line.

Unfortunately, the implications of this approach became clear only after claims experience began to deteriorate in the late 1980s and early 1990s. There were major problems associated with the IP product in all areas. On the underwriting side, the market had:

- poor training and expertise levels amongst staff, particularly failure to understand the differences between mortality and disability risks;
- inadequate application forms that failed to prompt the right disclosures and which did not provide sufficient detail about the applicant's occupation; and
- an over-emphasis on the reliability of information supplied by the applicant's own doctor.

On the actuarial side, weaknesses were also present, such as:

- inefficient collection of claims data at the industry level and by individual insurers. For example, industry claim inception and termination experience for the year 1989 did not become available until 1995;
- failure to measure the financial performance of the IP block in its own right. In many offices, poor IP performance was masked by good performance from other product lines. Thus, the need to take remedial action was simply not identified until it was too late; and
- use of traditional "Manchester Unity" sickness techniques for pricing and particularly for reserving acted to conceal, rather than reveal, the emerging trends.

On the claims management side, the key problem areas were:

- under-resourced and under-skilled claim teams, which resulted in inadequate efforts being made to validate claims prior to paying them. Once in payment, claims were not actively reviewed or managed. The root of this problem was a desire to keep expenses under control.
- an over-reliance on information supplied by the claimant's own doctor who was acting as an advocate for the claimant in many cases.

Factors Driving Deterioration in Experience

The primary factors driving the deterioration in claims experience were increasing competition between insurers, and a change in the structure of the employment market and attitudes towards work, all of which were exacerbated by an economic downturn.

Increased competition between insurers manifested itself in policy features and underwriting. On one hand insurers introduced more generous benefit definitions (particularly a move from "any occupation" as the standard to "own occupation") and benefit formulas, and an increased use of rate guarantees. At the same time, occupational underwriting became more generous, with high-risk occupations moved into lower risk categories for marketing reasons. The effect was to make it easier for policyholders to qualify for benefits and more difficult to persuade them to return to work.

In the early 1980s, the economy in the UK underwent significant changes, with a shift from a manufacturing-based economy to a service-based one. Accompanying this was mass unemployment and the growing use by employers of early and ill health retirement to reduce the workforce. One unanticipated consequence was an increase in the degree to which long-term illness and absence from work became socially acceptable, particularly for previously taboo illnesses such as stress. When the UK underwent another economic downturn in the early 1990s, the foundation was in place for IP insurance policies to be used by policyholders to preserve their financial position in a difficult economic climate. In effect, prolonged sickness was a financially and socially attractive option for the policyholders.

The impact of these factors on claims experience is shown in Figures 1 and 2. Figure 1 shows the claim inception experience in the years 1975 to 1994 for males—shown are the ratios of actual claim inceptions to expected claim inceptions. Data is given separately for deferred periods of 4, 13 and 26 weeks. While experience for business with shorter deferred periods has been relatively good, that of the 26-week deferred period has been very poor with claim inception rates more than 50% higher at the end of the period than at the beginning. This pattern is explained by the failure of insurers to begin claims management until the claimant had been sick for some time, at which point it was difficult to get them back to work. The experience for female lives was also poor, running between 50% and 100% higher than that of males (female data not shown in Figures).

Figure 1

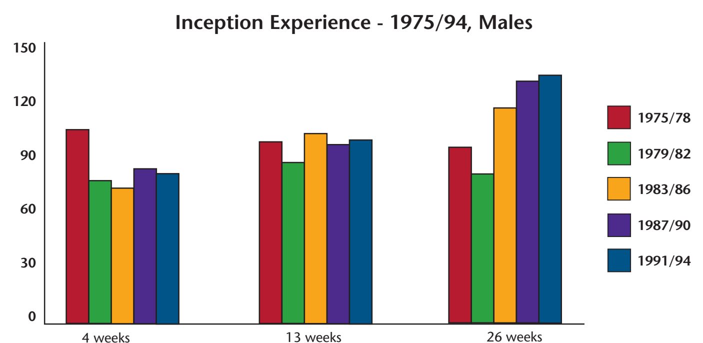
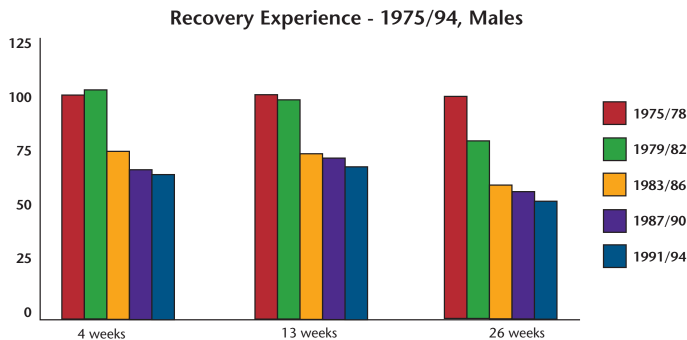


Figure 2 shows the corresponding recovery rates—shown are the ratios of actual claim recoveries to expected claim recoveries. Low recovery rates are bad for insurers because this means that claims last longer than anticipated. The graph shows a clear and significant deterioration. Recovery rates in 1994 for all deferred periods were running at around half the level in 1975. The experience of females was similar to that of males.

Figure 2



Remedial Action

The early 1990s saw insurers wake up to their IP problems. A number of insurers had to realize very large losses, some in excess of £100 million. Premium rates for new and (if possible) existing policyholders were increased. Some insurers withdrew from the market; others withdrew their guaranteed rate products. Underwriting and claims handling improved, and the actuarial profession recognized the need to improve data collection and analysis. Sales were hit badly and have only now recovered to the levels of 1990.

Have these actions been effective? Claims experience data in the UK is now available up to 1998, and the patterns are mixed. A number of unexpected results have appeared:

- recovery experience is remarkably similar between males and females;
- recovery experience is remarkably similar between occupations; and
- despite the substantially improved economic position, recovery rates have not improved significantly since the early 1990s. The inception experience for policies with a longer deferred period has not improved either.

The reason for these patterns is not fully understood. If the economic downturn was responsible for the deterioration in experience, then one would expect claims experience to subsequently improve. This should act as a warning to insurers of the need to maintain risk management discipline.

Lesson from the UK

Experience in the UK has been far from unique. The US market suffered similar problems a few years earlier than the UK, and the Australian market a few years later. Although each market had its own unique features, the common denominator was sales in a highly competitive environment of policies with an "own occupation" definition of disability. The key lesson is that "own occupation" IP insurance is a fundamentally high-risk line of business, and effective risk management is essential to ensure profitability.

GeneralCologne Re is committed to providing the highest quality risk management advice to our clients. We are able to call on our global network of expertise to help ensure that insurers do not repeat the mistakes of the past.

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Disability Schemes in Germany and the Netherlands

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GERMANY

The Demand for Disability Protection

Cover provided by the social security system

In Germany, the demand for disability protection is determined by gaps left by the social security system. At present, the social security system provides disability payments in the form of an annuity for anyone who pays into the system. There is a waiting period of five years starting with the first day of his/her first employment before any benefits can be claimed.

There are two levels of disability protection: one covers an inability to perform *any occupation* and pays a benefit of approximately 100% of the standard old-age pension, and the other covers an inability to carry out 50% of the tasks of one's *own or similar occupation* and pays 66% of the old-age pension. In general, benefits are only paid if the disability can be considered to be permanent. A disabled person, who could theoretically work in a similar occupation but is unable to obtain such a position, is also paid.

Disability, in the sense of the *any occupation* definition, means that the person is not able to earn 1/7th of a standard income. Usually a claim is honoured if a person can't work more than two to three hours a day. The *own or similar occupation* definition implies that the ability to work is 50% of that of an otherwise healthy person with comparable education, knowledge and ability.

Legislation is being developed to reform the social security system in response to demographic developments. For the disability cover, the plan is to eliminate the distinction between *any* and *own or similar occupation* definitions in favour of a cover that protects only against an inability to carry out *any* occupation. Under this cover, people who are unable to work for at least six hours a day would be paid 50% of the benefit, and 100% of the benefit would be paid only to those who could not work three hours per day.

Cover provided by private insurers

The social security system does not include the self-employed and these people must purchase private covers. Employer-sponsored pension schemes mostly include disability covers for sickness and, depending on the nature of the work and the employer, there may also be additional protection against disability caused by accidents at work.

The social security system leaves a gap in several areas and this is the market for individual and group disability insurance: high levels of income, protection against *own occupation* disability, and specific professional groups.

Disability Covers Offered by Insurers

General structure of disability covers

The traditional German disability cover is an annuity benefit that is paid until retirement. The annuity stops if the claimant dies or returns to work. In rare instances, the disability policy pays a lump sum benefit. Disability covers are commonly added as riders to standard life policies (e.g., endowments), but there are also stand-alone covers. The riders mostly provide a disability benefit and include a waiver of premium for the regular level premium payment of the main cover.

Subjective risk

These products are sensitive to subjective risk, meaning that the insured may make a claim, not because of objective disability, but because of the opportunity to receive an attractive benefit. The following points should be considered:

- The amount of the annuity benefit must be less than actual income. However, if the client is over-insured (e.g., actual income was overestimated during the application process, or several policies were purchased from different companies with total benefits exceeding income), there is the temptation to accept disability or exaggerate relatively mild complaints in order to claim a disability benefit which exceeds income.
- The usual form of cover provides an annuity benefit. Lump sum benefits are also sold in the market, mostly as an additional benefit alongside an annuity. A lump sum makes sense because a disabled client might have to modify the house or to buy a new car. From the actuarial point of view, lump sum benefits should be offered with caution because none of the money is returned to the insurer in case the client returns to work. Thus, there is the temptation to find reasons to claim the cash benefit, even if the annuity is later stopped upon return to work. Life-long annuities should also be avoided because of similar concerns about anti-selection.
- When the benefit period is longer than the period of insurance, subjective risk occurs at the end of the period of insurance. This can be neutralised by gradually decreasing the benefit amount or restricting the time difference between benefit period and period of insurance.

Underwriting

Underwriting is crucial to profitability in the disability market. The important aspects are medical checks, assessment of the occupation and sports (avocation) risk, and appraisal for over-insurance.

Definition of disability

The initial definition of disability selected by German insurers was identical to the *own or similar occupation* definition used by the social security system because it was convenient to have agreement between private and social security definitions. Nevertheless, acceptance of claims by private insurers does not automatically follow acceptance by the social security system, the reason being that decisions by social security personnel might be influenced by the labour market and other economic factors. Today, German insurers have greatly expanded the range of definitions of disability, including *own or similar occupation* cover; and *any occupation* cover that replicates the social security definition.[1]

The *own or similar occupation* definition of disability can be divided into two cases. The first case is that no benefit is paid if there is a theoretical possibility that the claimant could work in another profession suited to his/her education, knowledge and ability. The second case is a more concrete, "real world" approach, namely, the benefit is only refused if the claimant is actually working in such a profession. Modern disability products have relinquished the more theoretical approach (although they still retain the possibility of requiring that the claimant pursue a *similar occupation*), the consequence of which is higher premiums.

The definition of disability includes the expectation that disability will last for at least a minimum set period. For modern products, this period is set at six months. Some policies also pay a benefit if the client requires long term care.

Apart from the definition of disability, the client can choose covers for various degrees of disability, usually 50% or 75%, where the latter is considered as total disability. Another product provides a graded benefit that pays between 25% and 100% of the insured annuity depending on the degree of disability between 25% and 75%.

New Developments

Professional groups

When insurers began to sell disability cover, the majority of occupations were accepted at standard rates, but some professions were declined and a number of others were only accepted with a premium loading of 50% to 100%. One of the latest developments is the introduction of products that differentiate by professional group. The idea is that the risk is heavily dependent on the profession, even more so than on gender, and this should be reflected in the price of the product. There are several ways to design such a product. A simple measure offers higher profit participation to low risk professions (disability covers usually are with-profit-products in Germany, e.g., bonus benefits or premium rebates).

A more polished actuarial approach is calculation of premiums and reserves by using different disability probabilities, dependent on age and gender, for four or five professional groups.[2]

It is very important to treat professional groups as a strict underwriting criterion, even if the sales force attempts to manipulate the profession in order to obtain a lower premium. Professions must be registered accurately because risk classification by profession is as important as gender and age from a pricing perspective.

Product features

There are different product features that can be adjusted on disability policies including:

- Deferred period: A deferred period can be included in the product. This is the duration of disability before the benefit is paid. The deferred period is specified in the insurance contract and can vary between six and 24 months. A deferred period makes the product less expensive and allows a better fit with other sources of income that the client might have, such as further salary payments by the employer or a health insurance cover.
- Extension of the waiver to an indexation of the main cover: Policyholders have the option to increase the main cover (with appropriate increases in premiums). Increases are automatic unless they are refused two times in close succession. The standard waiver of premium, on the other hand, covers the flat premium only. In order to insure an indexed main cover, the waiver has to be adapted accordingly. This feature is known under the name "airbag."
- Decreasing cover: The client may require a decreasing level of insured annuity according to changing needs in the future which are already known at the beginning of the insurance contract. For example, the insured annuity can be decreased when the children have finished their education, or when a credit or loan has been paid back. Products reflecting this structure are also offered. On the other hand, there are products that offer the possibility to increase the insured annuity without new underwriting if there were an unanticipated increase in the need for cover, such as starting one's own business or the birth of a child.

Integrated services

Further enhancements in disability products can be expected. Features that might add more value include disability-related services such as professional advice about rehabilitation, helping claimants find vacancies in rehabilitation centres, and assisting policyholders who want to submit a claim.

THE NETHERLANDS

The Netherlands is an important disability insurance market. Sales of these products have always been strong and there is the potential for future growth due to reforms undertaken in the 1990s. The fact that insurance products are mainly distributed by brokers contributes to the large variety of products that are available.

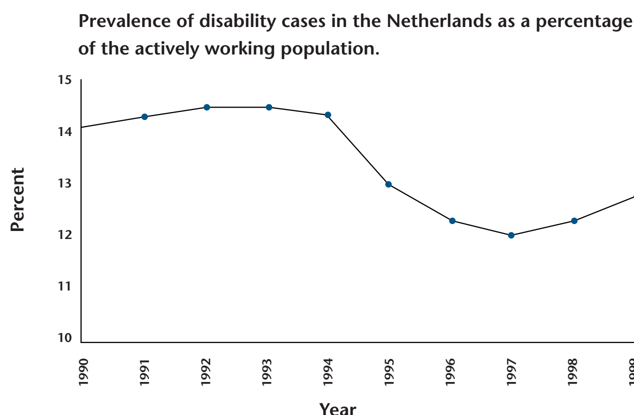
Tough Times

For many years, the Dutch social security system was considered a generous one. In the early 1990s this led to serious problems for social sickness and disability schemes, as well as for the Dutch economy. Due to a rise in absenteeism and a high incidence of long term disability, Dutch labour costs were among the highest in Europe, and the Dutch economy struggled to maintain its position. The government was forced to initiate drastic reforms in 1993 (prior reforms in the 1980s having been unsuccessful).[3]

The first step was a reduction of disability benefits for long-term disability cases, which left employees with a benefit gap should they become permanently disabled (referred to as the "WAO-gat"). Further reforms followed with the aim to modify short- and long-term benefits provided by social security. In 1997, the compulsory cover for self-employed individuals was also changed.

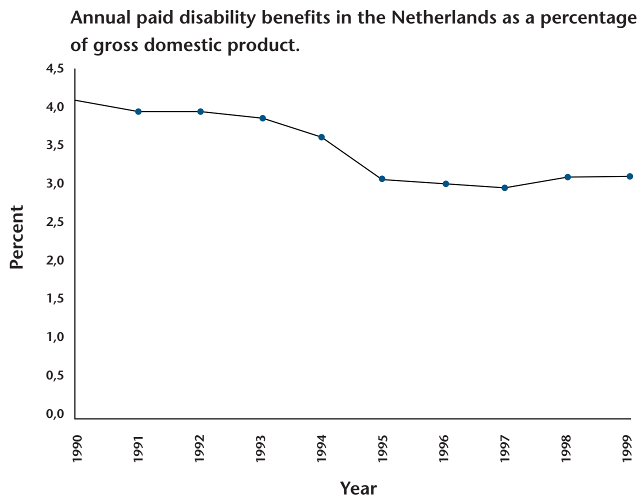
There were two principal aims of these reforms. First, the obvious goal was to reduce the number of new disability cases, while improving the chances of finding a job for people with reduced working abilities. Together these initiatives should result in a lower overall number of disability cases. Second, emphasis was placed on premium differentiation by private insurers and more self-insurance by employers. The idea was to liberalise market offerings to achieve better prices and greater efficiency by all parties, and thereby provide incentives for employer and employees to use fewer social disability benefits.

Figure 1



The success of these initiatives is indicated by favourable trends in disability cases as a percentage of the active population (Figure 1), and annual paid disability benefits as a percentage of gross domestic product (Figure 2).[4]

Figure 2



Individual Products

Changes in the social disability schemes provided new opportunities for the private insurance industry. Besides the covers dedicated to replacement of former social security benefits for short-term or long-term disability, the market today offers a large number of disability products on an individual basis, such as:

- products which increase the level of available benefits (the replacement rate) for employees with incomes above the social security ceiling;
- individual income protection products for self-employed people; and
- disability benefits as a rider to life insurance policies (annuity or waiver of premium).

Definition of disability

Improvement in the disability situation between 1993 and 1996 was partially due to a modified definition of disability. Policies with *own or similar occupation,* as defined by the person's education and experience, were replaced by products with an *any occupation* definition where the remaining ability to work is assessed.

For disability schemes that replace social security covers, private insurers must accept claims decisions that are made by a "social" organization which evaluates requests for disability benefits, i.e., private insurers cannot refuse payment in these circumstances. The only way to influence the course of these claims is through effective case management and supportive interaction with the employer to try to return the claimant to work by modifying the workplace or by finding an alternative position in the company.

For individual products, private insurers retain the option to use whatever definition of disability they choose, as well as their own claims assessors. But in fact they usually use a definition similar to the one used by the social schemes. However, the move of social security from *own or similar occupation* to *any occupation* was not followed by all private insurers on their individual products, meaning that today one can find disability definitions based on *own*, *own or similar*, or *any* occupation. There are even products which claim to fill the gap between the social security type of disability and insurers' more liberal definitions. Due to good results in the mid-1990s, companies started to compete on disability definitions; they have since learned that this strategy does not pay off in the long run (see "Lessons to Learn" later in this article).

Occupational classes

Dutch disability insurers are used to occupational classes. One normally finds four classes, but there are examples with five or even seven classes. There is no proper calculation base for the different occupational classes, meaning that different incidence rates are not available. The pricing model uses a flat premium loading for each different class (Table 1).

Table 1. Premium loading related to occupational class

Class	Professional characteristic	Premium loading factor
1	Administrative	0.70
2	Commercial and supervisory	0.85
3	Light physical/manual work	1.00
4	Heavier physical/manual work	1.20

Benefits

The normal benefit is an annuity payable until an age specified from the outset (between 55 and 65). Annuities can be chosen as constant or indexed. The insured annuity could be indexed during the premium payment period, or exclusively in the case of actual claim payments (paid benefits would then increase by a fixed percentage every year). The amount payable in case of disability depends on the degree of disability, which could look like the scheme in Table 2:

Table 2. Level of benefit paid out related to the degree of disability

Degree of disability (%)	Benefit paid out (%)
<25	0
25-35	30
35-45	40
45-55	50
55-65	60
65-80	75
80-100	100

Maximum benefit amount is determined by a replacement ratio which represents a percent of current income. The insured does not participate in profits (e.g., bonuses or premium rebates) related to technical or financial surplus on the business.

In the Netherlands, the disability risk, as well as the product, is split into two parts: the first year of sickness (rubriek A), and disability that lasts longer than 52 weeks (rubriek B). In other words, part B uses a deferred period of one year. For part A, the insured has a choice of different deferred periods.

Other features

The duration of a disability policy is normally limited to 10 years. Premiums are typically level, but there are products based on annual risk rates, or even products where the premium is a combination of risk premiums up to at certain age (e.g., 45 years), and level premiums thereafter. Special products for entrepreneurs starting a business offer reduced benefits and premium rebates during the first policy years in order to make the product more affordable.

Pricing basis

As in Germany, the Dutch use an inception annuity pricing approach. For individual products, a committee of the federation of Dutch insurers, called the KAZO committee, recommends incidence rates, reactivation probabilities (probabilities for a disabled person to return to work or to a degree of disability not offering a benefit payment), and mortality rates for disabled people.[5]

Given the focus on replacing social security schemes with group covers, there have been a lot of adjustments to the group insurance pricing model. The basis for individual business, last revised in 1990, was updated in August 2000.

Lessons to Learn

Recent experience in the Netherlands clearly shows the complexity of managing group and individual disability risks. The entire Dutch market was initially quite optimistic about the potential for growth after privatisation of parts of the social security system. However, the enthusiasm was short-lived and followed by a longer period of painful experience. The traditional belief that disability risk is correlated with a country's economic situation—as the economy goes down, disability rates goes up, and vice versa—is no longer true. Today, there is concern that it could be the other way around. In the Netherlands, there has been strong, steady economic growth and low unemployment for the last four years. Yet for the last three years, there has been a continuous increase of number of new disability cases (although the percentage of disability benefits, as a percentage of gross domestic product, remains stable because of the strong economy). Many of these cases can be attributed to psychological/mental impairments and to the fact that industries employ people who have reduced working abilities due to health problems.

Specialists believe that new labour environment of the late 1990s created pressure and intense stress that could not be assimilated by employees. Similar developments and experiences have also been observed in Germany. Dutch insurers responded to the flood of new disability cases by creating and implementing disability case management. This enables the insurer, at a very early stage of disability, to begin rehabilitation and/or modify the job or work site in order to return the claimant to work.

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Case Management: Transferring the Skills to Claims Management

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As we peruse the Australian life insurance market, it becomes obvious that there are a variety of claims practices floating around, some old, some new, some borrowed. Many companies have experienced losses on their income protection (disability income/permanent health insurance) portfolios, and some claims personnel have occupied the same desk for three years and worked for three different companies (due to multiple corporate acquisitions)! So what has a reinsurer to offer that can refresh the despondent claims professional?

Over the past three years, GeneralCologne Life Re Australia has conducted a number of Interview Technique and Case Management workshops. These workshops are designed to provide skills to claims personnel that recognize their unique role in the insurance business. In particular, the focus of these workshops is to highlight the fact that a different skill set is needed to manage an income protection portfolio versus what is needed to handle lump sum benefits. In effect, the workshops equip the claims professional with a *claims management model* that provides some direction for tackling the complex nature of income protection claims.

The introduction of a claims management model encourages claims professionals to clearly identify their role—*what they do, how they do it, why they do it, and what it achieves.* A consistent approach to claims practices is essential for the claims industry to make their role in the insurance business more professional. This is particularly relevant when the poor performance of a product is in the spotlight. Although claims management is at the end of the product cycle, what the claims professional delivers is, in essence, the final product. The performance of the product is significantly influenced by claims management techniques. Claims professionals are now center stage!

A New Direction

The future of claims management depends upon the industry embracing new techniques. The first step is to test these new strategies, and then evaluate their effectiveness to ensure best practice results. Equipping claims professionals with these techniques will make the difference.

Managing an income protection claim requires a planned and coordinated approach that focuses on a management plan that is structured to the individual needs of the claimant. Implementing a management plan requires that the claims professional be proficient in research, objective assessment, liaising, early intervention, planning, resource development, client support, and verbal and written communication. These are key

learning areas. Today the focus of the claims professional's role must extend beyond periodic follow-ups and obtaining minimal subjective data.

Currently many claims departments have a system in place that relies on administrative policies and operational procedures. When we consider that the core focus of our task is to manage the *individual* claim, we realize that this involves focussing on the client—the person. Successful claims services are now creating a structure that relies on a relationship management concept. This individualized approach has some basic core characteristics that originated in *case management* theory and includes:

- a focus on the client;
- a relationship with the client, as well as the service providers, and the development of a communications network for all parties involved;
- the negotiation, coordination, and procurement of services needed by the client; and
- a need to remain continuously focused so the client receives no delay in treatment provision.

This *Individual Claims Management Model* aims to build a co-operative relationship with the client from the onset of claim notification and continues until wellness or return to work is achieved. The primary purpose of a new direction in claims management is to bridge the gap between the insurance company, the client, and the return to work process. This model has been specifically designed to proactively assist clients to return to work during the course of their treatment, or as soon as possible thereafter. It is achieved through a continuum of service delivery, rather than providing service in segments, and it is accomplished by utilising strong management techniques.

Why Case Management?

The complexities of disability claims management and the current economic and social landscape explain the need for seamless coordination among the many players involved in helping the client return to work. The idea of case management is used in various contexts in the life industry, including internally or externally appointed case managers or some application of this theory to the role of the claims professionals. Generally, there is recognition that case management offers some positive input to how we manage claims.

Disability and illness are complex issues. A period of illness may have more to do with co-morbid factors, such as financial stress, relationship loss, and employment changes rather than the actual medical condition. Medical practitioners now recognize that in some instances a medical condition becomes a solution to a non-medical problem. Claims professionals have also noted the trend in life events that occurs concurrently with claims events. Understanding and addressing these complexities requires gathering objective information on all factors affecting the claim, not just the medical condition. A team approach is often a key to effective management. Being a liaison with the medical specialists, as well as the employer, family members, legal counsel, and vocational experts, can help piece together a clearer picture of the clients' current state. Case managers consider this an integral part of their role.

So what is case management?

Case management is a method of providing comprehensive, unified and timely service. It is the process by which a case manager works jointly with the client and service providers to plan, coordinate and monitor the ongoing progress of the client's recovery. Case management is a multifaceted job that requires flexibility, patience, efficiency, lateral thinking, and a strong sense of teamwork. Traditionally, there have been two models of case management: the medical model and the psycho-social/community based model. Both rely on coordinating and negotiating services for a particular client group, and both ensure that they are intervening at key points in the client's return to wellness. They strive to ensure that the client has the maximum level of support necessary to facilitate return to work and wellness, with the greatest level of independence.

Certain core characteristics of case management are integral to successful outcomes:

- advocacy;
- holistic client orientation;
- negotiation of services and resources;
- coordination;
- focus on individuals/clients at risk;
- a continuum of services and links to the case manager; and
- network development and establishing relationships.

When one stops to consider what case management aims to achieve, there is a striking resemblance to what the claims professional is striving for in effective claims management. The case manager:

- makes an *initial assessment* that explores expectations and goals;
- manages the client's expectations throughout the claims process to prevent the development of a "disability mindset" and a potential for a long-term claim;
- maps out long-term return to work plans, considers what services are required, how they will be acquired, who will provide them, and when they will be provided; and
- assumes the role of *facilitator* of the plan and ensures that all goals are being met within the negotiated time frame.

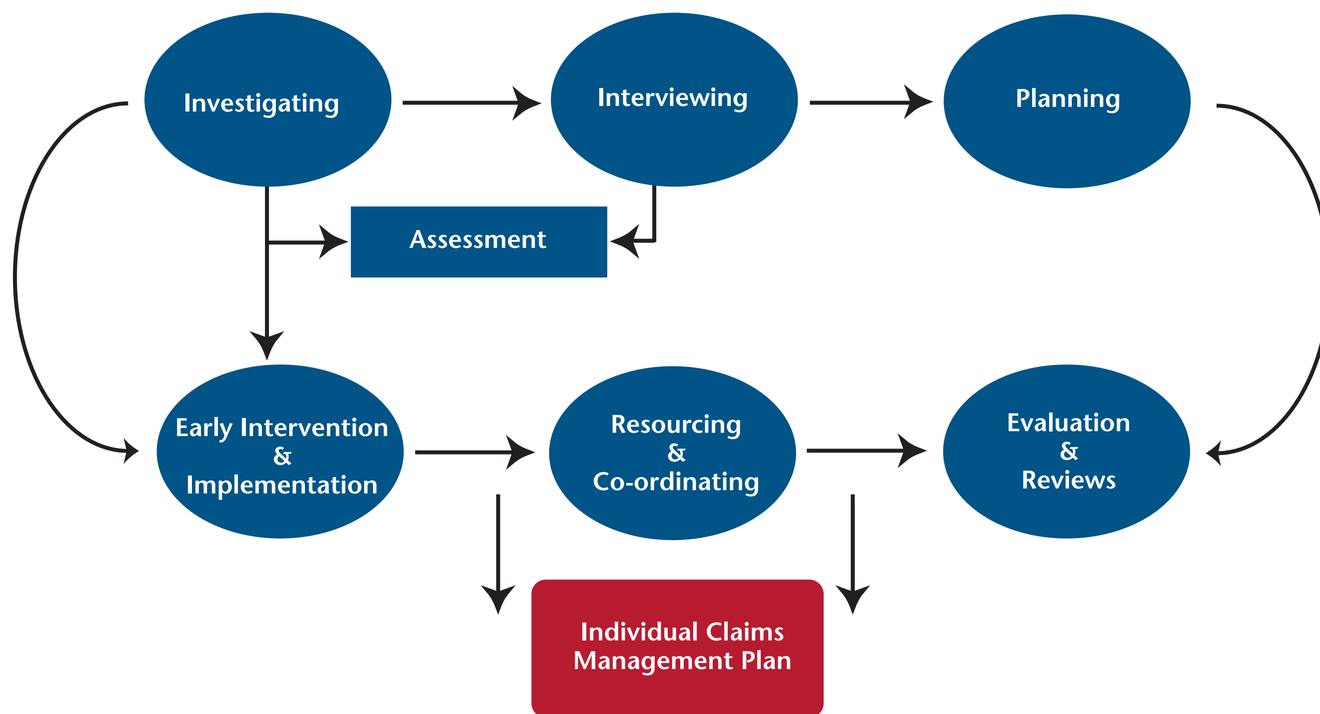
Case managers do this with strong communication skills, a good working knowledge of the resources available, close monitoring of plans, and an ability to refocus when required. They also provide encouragement for clients and establish supportive relationships.

Managing a Process

When the life insurance industry considers global trends, it becomes evident that our societies are experiencing an increased number of individuals with socio-economic issues, an increase in chronic illness, a more complex and short-term job market, and rapid changes in medical technology. In order to keep abreast of these issues, claims professionals need to maintain regular contact with their clients and treatment providers. This ensures a better understanding of the client's individual issues and the effect of illness or disablement on their life style and potential employment. Case managers adopt a process that stems from the roots of good problem-solving techniques.

When considering the claims management process, most would agree that the aim is to intervene from the onset of ill health or claim notification, and continue consistently until wellness or return to work is established. How we achieve this objective is where the theory of case management is relevant. The Figure below outlines a proposed *Claims Management Model* that attempts to show the six stages of best claims practice. Each stage is linked and the cycle is a continuum. It draws from a number of the case management characteristics previously mentioned, but adds issues pertinent to an income protection claim.

Figure. Macro Individual Claims Management Model



"Claims Management as a partnership and not a hostile takeover" (Bower and Falk, 1993)[1]

A Claims Management Model

The steps of this model are all linked. The result of these steps is the Individual Management Plan (IMP). The primary task of the claims professional is to develop an IMP that establishes the plan of recovery for the client.

Assessment

Investigating and interviewing are ideally done simultaneously to produce an initial assessment. However, assessment is a continuous process as these plans change and expand. Investigating involves examining the information produced at the time of notification, comparing it to the application papers and underwriting decision. It may also involve some preliminary discussions with the insurance company's consultant medical team/officers to ensure a clear understanding of the condition, its impact on well being and specific occupational duties, as well as the likely recovery time.

The initial interview is one of the most crucial steps in claims management. Interviewing the client and other relevant parties provides numerous opportunities to establish cooperation, define responsibilities, and outline the claims management process. Understanding the process of how the claim will be managed helps to clarify expectations for the client—what can be expected of the claims professional and what is expected of the client. In the United States, litigation for medical malpractice is rampant, and defense attorneys stress that poor communication is the most important factor in a patient's decision to litigate. So two-way communication is essential to this process.

An interview is quite simply the communication process between two parties. The intention and the role of these two parties may influence the theme of the interview, but the primary goal is to exchange information. The initial interview may be used to establish contact, define a problem, assess the client's situation or needs, or even negotiate an agreement. Traditionally, the life insurance industry has utilized external investigation services to conduct interviews. This type of interview has a specific purpose and desired outcome. In our model, one of the principle outcomes of the interview is to produce a *co-operative relationship* with the client. An interview, either by phone or preferably face-to-face, performed at the beginning of the claims management process, provides a comprehensive understanding of the client's perspective and helps gain "the full picture" of the situation. Information is gathered about the client's medical condition, medications, medical history, medical specialists (including reports and test results), occupation, specific duties, work environment, education and training, financial position, family relations, cultural issues, living arrangements, legal issues, other service providers, coping strategies, and future plans. After covering such an exhaustive range of issues, the claims professional is equipped with information and knowledge about the claimant and how to work with him/her.

Planning

When attempting to establish a co-operative relationship, and/or influence another person, preparation and planning is the key. The same applies to good claims management. Preparing the intervention involves defining:

- what you want to achieve;
- what you want to know; and
- how are you going to do this.

The challenge is to enlist the client as a co-operative participant in the claims management process and his/her well being.

The goal of a successful IMP is to establish a plan of recovery for each client. These are negotiated with the client and monitored regularly. Such plans ensure that the client complies with procedures and treatment, and that improvement is continuously sought. The claims professional is the key contact for the client. The IMP is developed in consultation with treatment providers, the client, and any other relevant parties. It is coordinated by the claims professional. In some instances it may be very brief, but difficult situations require more complex plans. Periodic progress reviews are integral to understanding the ongoing needs of the client and to assessing the effectiveness of the plan. An IMP is similar to treatment and managed care plans used by case managers and as such, needs to be constantly revised depending on the clients' condition and risk status.

The core components of the role of claims professionals when implementing an IMP involve a reasoning process that includes:

- identifying objectives;
- defining goals;
- developing and implementing actionable items;
- creating time frames; and
- evaluating and revising the plan.

The outcomes of an IMP can often be used as a quality management tool to measure effective claims planning against key indicators. IMPs do require close time management and therefore "diary control" is critical. Review dates are recorded for follow-up of a planned action. Keeping up with the pace of each goal set is integral to achieving them. Meeting the planned time frames shows that claims professionals are meeting their responsibilities and puts the onus on clients to do the same.

Early intervention & implementation

Early intervention has been regarded as the most important factor to a successful claims outcome. In the insurance industry, early intervention is viewed as the key to understanding the client's condition and to implementing the appropriate services to bring about a successful return to work. It is often done in conjunction with assessment. This model relies on the initial assessment being performed within 24 to 48 hours of claim notification. The sooner the client understands the claims management process, and the claims professional is clear about the client's likely course, the sooner plans can be implemented with vocational experts, medical specialists, and/or treatment programs. This is increasingly relevant with the increase in psychiatric claims.

Once plans are proposed and time frames set, benchmarks are established for the overall management of the IMP. The *Official Disability Guidelines*[2] of the Work Loss Data Institute are often a useful reference for estimating duration of disability. The duration considers the availability of local resources depending on the medical cause and occupation. As in any country, Australia has regions where there are waiting lists for rehabilitation and vocational specialists. For situations where referrals are made to various outside agencies (rather than using in-house services), companies are advised to take note of the good providers and set up service agreements with them. The quicker the connection to services is made, the more likely that the client will continue to co-operate and be motivated to return to wellness and work.

Resourcing and co-ordinating

The claims professional links the client with appropriate services and maintains contact with his/her progress through these services. Where services are not available, the professional takes on a resourcing role by researching alternatives.

Liaising and researching are not necessarily traditional roles for the claims professional. In the Australian medical services environment, General Practitioners (GPs) have approximately 20 minutes (maximum) for a patient's consultation, the average being about 10 minutes.[3] When we conclude that the circumstances of many of our clients are complex and not limited to just the medical condition, we must also conclude that GPs do not have the time to meet all of the client's needs. Claims professionals, working under this model, consider GPs as an integrated part of the client's network. They have regular contact with GPs from the onset of the claim and often consult them to establish the best options for the client's recovery. This close, cooperative relationship is the basis for meeting IMP goals and for building a working knowledge of services and resources throughout Australia. The claims professional often assumes responsibility for contacting these services in collaboration with the GP and the client. As noted previously, the claims professional can act as a service coordinator for the client.

It is often assumed that agencies utilized in the claims management process actually understand the role of the claims professional. This is often not the case. It is recommended that companies that utilize this model produce educational materials that outline the role of the claims professional, the scope of the companies' claims services, and the mission statement and company philosophy.

Our Professional Responsibility

The skills required by claims professionals are unique, and their education and training must reflect this fact. Taking responsibility for on-going education is essential in developing the proficiencies needed. Interviewing, communicating, assessing, liaising, and negotiating are all skills that can be learned and are some of our most powerful tools for effective claims management practices. When it comes to the final product in the production line of life insurance, it is the responsibility of the claims department to deliver services not just efficiently but effectively. When working within a specifically designed claims management model, claims professionals can ensure that their company delivers a service that is client focused and within the intent of the product's design.

1. *Bower KA. Best Practice in Case Management: A Workshop for Health and Welfare Professionals. The Center for Case Management. Sponsored by Deakin University, Australia.*
2. *Work-Loss Data Institute. Official Disability Guidelines, 2000. <www.DisabilityDurations.com>.*
3. *Medical Journal of Australia, 2000.*

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Using Work Task Definitions of Disability for Income Protection Policies

Ross Campbell
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Income Protection (IP) is a long term insurance policy designed to replace a proportion of income by paying benefits, following a selected deferred period, for any illness or disability that prevents the policyholder from working. The claim remains payable until the person is fit enough to return to work and no longer qualifies under the definition of disability that underpins the contract from the outset.

Insurers have traditionally used several definitions of disability for their IP contracts, namely:

- *own occupation* under which policyholders qualify for benefit if they are unable to perform their normal jobs;
- *any occupation as suited by education, training or experience* which pays benefits if policyholders are unable to perform their own jobs or any similar work; and
- *any occupation* which pays benefits only if policyholders are unable to perform any gainful occupation at all.

More insurers are considering a move to a definition of disability based on work task definitions. These are commonly referred to as ADWs (Activities of Daily Work) or FATs (Functional Assessment Tests). In this case, a policyholder would qualify for benefits if he/she were unable to perform a specified number of tasks and activities associated with performance of his/her occupation.

What Has Held Back Sales of IP?

Though the concept of IP is a good one and the potential benefits appear obvious, the product has little appeal to the mass of the working population. Some of the causes of poor sales include:

- marketing IP purely as a method of protecting the maximum possible level of income, the downside of which is that premiums appear expensive;
- the fact that many in the target market prefer not to contemplate long-term incapacity, let alone buy insurance to provide for it, hoping instead for a financial safety net from their employer or the Government;
- poor product communication and incorrect assumptions about the IP product, respectively, by sales agents and the buying public, the result of which is that IP has been targeted to unsuitable applicants in many circumstances;
- more stringent underwriting for contracts with shorter deferment periods and for applicants with specialized occupations or health problems, resulting in policies issued with re-classified occupation classes or exclusions of existing medical conditions; and
- the occupation definitions themselves, primarily when there are significant differences of opinion among the policyholder, the adviser, and the insurer with regard to interpretation of the disability definition. Removing subjectivity is the aim of adopting work task based definitions for IP.

IP Underwriting Can Seem Illogical

The fact that there is some confusion surrounding IP does not come as a big surprise to anyone. Buyers of IP expect a product that offers full cover when they are unable to work. Two aspects of selection conspire to make IP a conundrum: interactions between occupation and the definition of disability.

Premium rates are driven by occupation classes into which similar types of occupations are grouped. People working in occupations requiring highly specialized skills or professional roles are grouped in one occupation class. It is reasonable to anticipate that these occupations would be insurable using an *own occupation* definition of disability. Underwriters recognize, however, that certain occupations require specific skills that are so specialized that finding alternative employment can be extremely difficult in the event of disability. Even occupations that

historically have been thought to be low risk can be associated with extreme levels of stress and burnout, accidental injury, or musculoskeletal wear and tear. The classic examples include teachers, dentists, and financial trading jobs. Underwriters have found that offering IP cover with an "own occupation" definition to such occupations presents an unacceptably high risk. Thus, to cover higher risk occupations, providers offer IP with definitions of disability that do not include *own occupation*. To sales agents and their customers this results in cover being offered that is less than comprehensive.

Cherry-Picking; that Old Chestnut

Occupation classifications and restrictive disability definitions open IP providers to the criticism that they only want to insure applicants at low-claim risk. "Cherry-picking" has been the term of abuse hurled at insurers for years. In the case of IP, this may be a self-inflicted criticism that is an unavoidable consequence of the policy conditions themselves.

There is an untapped market for IP in workers who could benefit from the cover but who currently cannot be accommodated within the usual definitions of disability. This market includes jobs that exhibit a high accident or health risk, or that require very specialized skills. People who are self-employed, work from home, or have occupations that suffer seasonal fluctuation would find IP cover an attractive product, but it is unlikely they could be insured with products that use the current disability definitions.

Problems of Interpretation

If cover against inability to perform your own occupation is the gold standard, offering revised definitions would allow insurers to write IP cover on riskier occupations. This is not the end of the story, however, because there would still be problems of interpretation at claim stage. The degree of subjectivity increases significantly at the time of claim and leads to conflicts of interest between the insurer and the policyholder. There are also questions such as whether it is realistic for a claimant to take up alternative employment and whether the insurer should terminate the claim if alternative employment is not found.

Addressing the Problem with Work Task Definitions

In order to offer a more attractive policy with broader market appeal and reduced levels of underwriting and claims subjectivity, UK insurers are developing new measures of disability. The aim is to dovetail, where possible, with measures of capability benchmarked by the government.

Key to this move will be use of the Personal Capabilities Assessment (PCA) drawn up by the Department of Social Security. The PCA aims to show where physical and mental abilities are reduced to the point where work becomes impossible. The PCA does not measure occupational ability and will help reduce the subjectivity traditionally associated with this measure. Work task definitions can be based clearly on the PCA benchmark.

Work Task Definitions

Using work task definitions means that benefits would be payable if the policyholder could not perform two out of six work tasks, the essence of which are:

- walking 200 meters on a level surface;
- lifting a one kilogram object from a table and carrying it five meters;
- using a pen, pencil or keyboard;
- hearing someone speaking in a normal voice in a quiet room; and/or
- the ability to read 16-point print.

Additionally there would be a "sweep-up" clause offering cover if the policyholder suffers mental incapacity requiring continual supervision as a result of organic brain disease or brain injury.

Will Work Task Definitions Help IP?

Work task definitions would allow sales of IP to a wider range of occupations than before. IP cover could be offered at a reasonable premium to those who previously found themselves classed as uninsurable. Occupational assessments and premium loadings would be needed only on higher risk applicants. These definitions would reduce, or even remove, the subjectivity associated with occupational definitions, though interpretation at claim stage would require that a test of reasonableness be applied, especially if there were partial failure of several tasks.

Work task definitions hold the promise of providing enhanced cover for many more people while reducing the potential volatility of the risk for the insurer. These definitions represent stricter claims criteria but would make underwriting assessments more straightforward. Underwriters would no longer need to concern themselves with understanding the subtle nuances of an applicant's job title or the percentage of manual activities within a given job title. Failure to perform one's own occupation would no longer be a claims trigger. In theory, this provides a level playing field to applicants for IP because everyone has an equal chance of performing these activities.

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Electronic Underwriting Manual Updated and Enhanced

Therese Droste, GeneralCologne Re, Hong Kong
Hilde Steinhauser, GeneralCologne Re, Germany

GeneralCologne Re is pleased to announce the completion of CLUE 3.0, our electronic underwriting manual for markets worldwide except for North America. Earlier versions were released in 1996 and 1998.

New Features, Additions and Revisions

CLUE 3.0 builds upon prior successes by including extensive updates and enhancements:

- ratings for life, dread disease (critical illness), income protection (disability income), health, and TPD (total and permanent disability) covers;
- concise narratives for medical impairments;
- illustrations of the major organ systems;
- information on foreign residence and travel;
- ratings for occupations and pursuits (avocations);
- guidance for interpreting laboratory values;
- information on medications; and
- Black's Medical Dictionary.

Major changes and additions to impairment guidelines are summarised in the table below.

Health Underwriting Guidelines

Health insurance is a difficult cover to underwrite because products, underwriting philosophies, and consumer behaviour vary from market-to-market, and even from insurer-to-insurer. Until now, this has made it extremely difficult to develop market-specific underwriting guidelines. However, based on the idea that certain fundamental principles are common to all forms of health insurance, CLUE 3.0 now features health underwriting guidelines that can be used for broadly diverse international markets.

These guidelines provide a risk assessment framework that is common to all markets but which can be easily customised for virtually any health insurer in any market. First, CLUE 3.0 utilises separate ratings for four major health benefit lines, thereby providing increased underwriting flexibility. Second, using this framework as a template, ratings can be configured (often at short notice) to correspond to different markets, product designs, pricing requirements, company experience, and other conditions. Suggested actions incorporate standard terms of acceptance, increased premium loadings, referrals to medical officers, postponements and declinatures. Alternate actions are often suggested, using an interplay of loadings and exclusion clauses.

Underwriters who are familiar with CLUE will find the new health guidelines easy to use. An added feature of the health section is the addition of build and blood pressure "pop-up" calculators, a traditional CLUE enhancement.

CLUE: An Ongoing Effort

CLUE is a collaborative effort among personnel in Hong Kong, Cologne, and other offices worldwide. Suggestions are most welcome for ways to improve future releases, as it is this input that enables us to update CLUE to reflect current insurance products and underwriting conditions. Please contact our Hong Kong office for additional information.

Table. New and updated impairments in CLUE 3.0.

What's new?	What has been revised or updated?	
Black's Medical Dictionary	Anorexia nervosa	Laboratory
Asian regional build rating table	Aplastic anaemia	LFT ratings
Diabetes wizard	Athlete's heart/cardiomegaly	Liver transplantation
Echocardiography	AV Block	LVH ratings
Ehlers-Danlos syndrome	Barrett's syndrome	Neurofibromatosis
Guest editors	Bipolar illness	Neurosis (completely revised)
Juvenile height and weight ratings	Bone marrow transplantation	Obsessive-compulsive disorders
Kawasaki syndrome	Build ratings	Occupations and pursuits
Knodell score	Bulimia	Personality disorders
Lung transplantation	Cardiomyopathy	Polycythaemia vera
Major haemoglobinopathies	Depression	Product descriptions
MGUS	Diffuse systemic sclerosis	Schizophrenia
Noonan's syndrome	Disability comments	Stroke
Pancreas transplantation	Dread disease definitions	Tumours
Persistent mood disorders	Drugs	Turner's syndrome
Pulmonary hypertension	Familial Mediterranean Fever	von Willebrand's disease
Renal tubular acidosis	Financial underwriting	
Severe stress and adjustment disorders	Glycosuria ratings	
Thrombophilia	Hepatitis B and C	

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Hilde Steinhauser *was the manager of GeneralCologne Re's international life underwriting section in Cologne for many years. She has always had a keen interest in online technology and is now working as a freelance underwriting consultant and online system author determined to prove that interface design and usability are not mutually exclusive.*

Medical Record Assessment in the Disability Claim Management Process

Russ Stogsdill P.A.- C.
John Hewitt & Associates, Inc.

The disability claim management process is one of multiple complexities. It involves contract interpretation, medical data collection and interpretation, vocational data collection and interpretation, and high-level interpersonal communication skills. One of the more vexing aspects of this process revolves around the collection, interpretation, and application of medical data. This article will examine and discuss issues surrounding the use of medical records in the disability claim management process.

The Medical Record: Past and Present

Over the past two decades, medical records have gained increasing importance in the care and treatment of patients. They have also assumed an important role outside the confines of patient care. What started out as a way for a physician to keep track of a patient's treatment, in the face of a growing patient population, has evolved into a complex medico-legal document. This has been prompted by societal change, increases in the general population, and increases in the size of the physician's practice. Today, the medical record can also be a legal document. Medical records are often used outside of the patient care arena for purposes such as Medicare payment, fraud investigation, malpractice litigation, Social Security Disability determination, workers' compensation, and underwriting and claims investigation for life, disability, and long-term care insurance. Why has a document that had such a simple beginning become the crux of so many decisions? As noted earlier, it is partly due to the sheer volume of individuals needing medical care. However, it also directly relates to the increasing complexity of medicine resulting from the explosion of knowledge over the past 70 years. The medical record, in its current state, is well suited to provide a way of tracking a particular patient's health care and treatment over time. Where it falls short is in the medico-legal environment because its format is not geared toward answering the questions that may be asked.

In the realm of disability claim management, having comprehensive and accurate medical records is crucial for determining whether a claimant meets the contractual definition of disability. The medical record is in one sense static, each encounter being a snapshot of the claimant's health and condition at the time they sought medical care. However, the medical record can also be considered dynamic, because when multiple static events are put together in sequence, one begins to see a more complete picture emerge. It is not unlike a movie where each individual frame shows only one moment in time, but when those same individual frames are spliced together they tell a story. If one looks at the medical record, using this metaphor, it provides an overview of a particular claimant's past medical history, which may or may not have contributed to the condition that resulted in disability. The medical record generally does a good job of documenting the incident that prompted the claim, at least in the acute phase of a person's illness. It also does a good job of documenting the course of treatment. When the claimant's impairment is ongoing, it provides information about his/her current medical status. Furthermore, based on past response to treatment, it may provide insight into the claimant's prospects for future improvement.

To adequately assess the information presented in any medical record requires a systematic approach to collecting the data, a thorough review and analysis of the findings, and the formation of an appropriate conclusion. In the insurance industry one such model is often referred to as the "Three Cs" of medical record analysis: *consistency*, *consensus*, and *credibility*. On the surface, reviewing the medical record using these three principles would seem easy enough. However, when one breaks down the process into its essential elements, it is not nearly so straightforward.

A case for consistency

Webster's Dictionary defines consistency as "a harmony of parts, firmness, cohesiveness, and/or uniformity of behavior." In applying this definition to the process of medical record review, one can see not only how well the definition fits, but also how complex the review process can become. Consistency in medical records should be considered a multilayered process. The first layer relates to what can be called *internal consistency*. This is rather straightforward and calls upon a reviewer to assess whether the medical record actually documents the presence of symptoms as described by the claimant on the claim form. If it does, then the next question to be answered is whether the physical examination findings are consistent with the claimant's reported symptoms, and whether diagnostic tests support the presence of a particular condition. Also, do the results of the physical examination and diagnostic tests agree with each other and correlate with the claimant's condition? Yet another area to examine is whether the treatment provided is consistent with the recorded objective findings, and is that treatment "appropriate" and consistent with established medical practices. If all of these factors are present, then one can say that the record, as presented, is consistent.

Consistency is not limited to the presentation of facts in any one particular office note or consultation record. The reviewer must move on to the next level and examine the medical data over time. It is during this process that one gains the greatest insight into the claimant's true status. Factors that should be considered may include:

- Are the symptoms continually documented?
- Are the physical examination findings consistent from one visit to the next?
- Is the claimant's ongoing treatment pattern consistent with the severity of symptoms and physical examination findings?
- What is the claimant's response to treatment and how have treatment patterns changed to reflect the claimant's response?

In looking at consistency one must also ask if the claimant has been referred to an appropriate specialist. If so, then an investigation of the specialist's findings is warranted to confirm that the previously recorded information is indeed accurate. If all of the questions are answered in a uniform manner, then one would consider the medical data presented to be consistent.

Levels of consensus

Consensus, like consistency, is multifactorial. In its simplest form it can be considered the agreement between two treating physicians regarding a patient's symptoms, physical findings, diagnosis, and/or treatment. It may occur between different specialties (e.g., the family physician and the rheumatologist) or the same specialty (as in cases where second opinions are sought). Both physicians may record similar findings and reach similar conclusions, or not.

One fact to remember is that consensus does not always mean agreement. An example might be a situation where two physicians agree that a patient has a particular condition, while having markedly different opinions regarding the impact of that condition on the claimant's functional capacity. This is not an infrequent occurrence. In such instances, the reviewer must consider that medicine is not an exact science, and that such valid differences of opinion can, and often do, occur. When confronted with a difference of opinion between treating physicians, the reviewer must look even further to assess the claimant's work capacity. It is precisely in these circumstances that the concept of credibility comes into play.

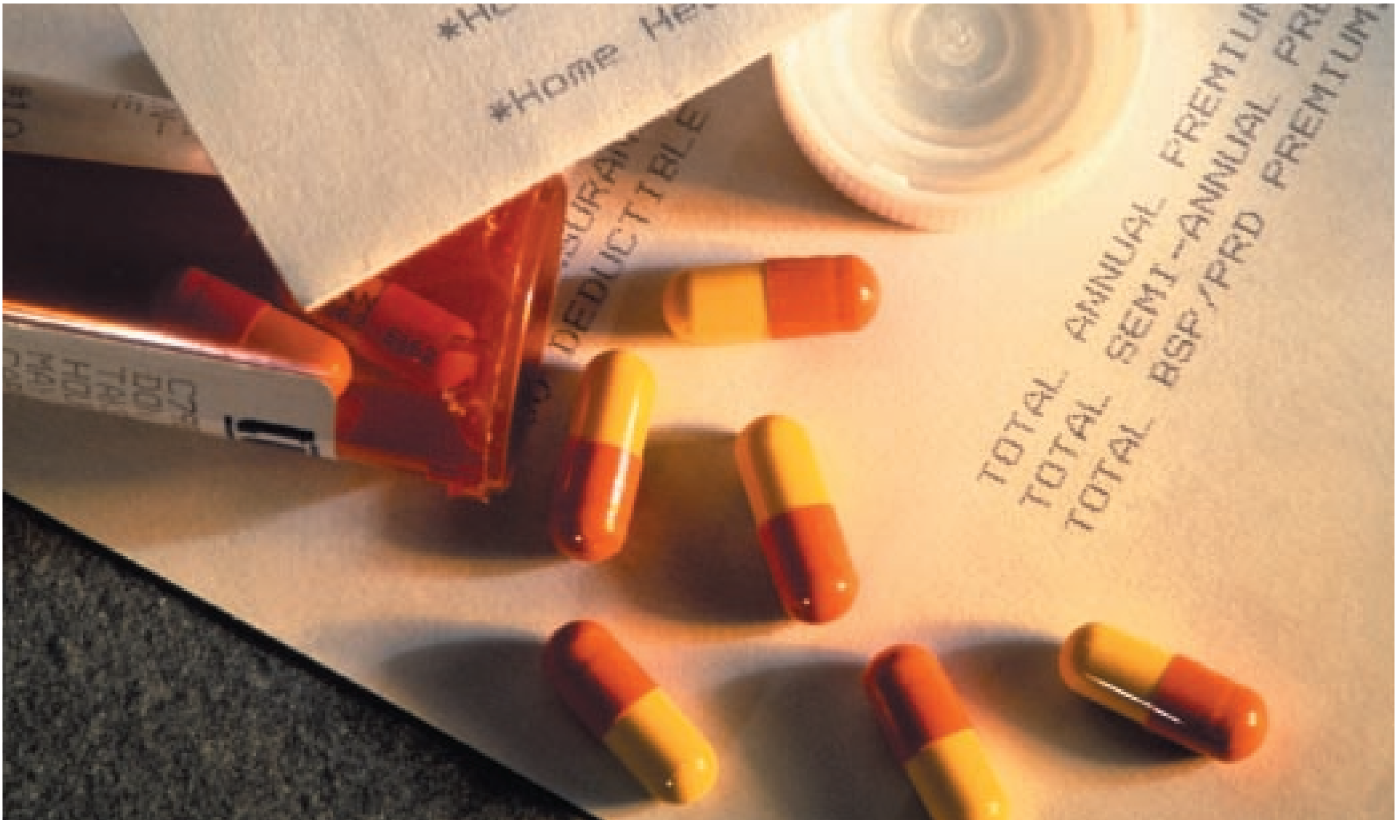
Credibility: Can I really trust this?

Credibility is defined by Webster as "trustworthy and/or believable." Thus, in assessing whether a medical opinion is credible, it is necessary to have already considered both consistency and consensus as they relate to the claimant's documented medical condition. Without consistent medical documentation, it is impossible to obtain a comprehensive or cohesive picture of the claimant's condition. Furthermore, in addressing the credibility issue, it is crucial to consider the level of training and expertise of the person who submitted the opinion. Questions that should be considered include (1) is the clinician who provided the opinion doing so within the scope of his/her expertise, (2) has the physician provided adequate medical documentation to support the opinion, and (3) is the opinion well reasoned and objective? By using these guidelines when there is a divergence of opinion or when there is an apparent lack of consistency regarding a claimant's functional status, one can begin to assess which of the opinions appears to be most reasonable.

Putting It Together

When analyzing medical records as part of the disability claim management process, one can readily see that consistency, consensus, and credibility do not, and indeed cannot, exist independently of each other. They are, by their very nature, intricately woven together. Without consistent reporting of findings in the medical records, it is difficult to have a clear picture of a claimant's condition. Consistency of findings on objective examination of the claimant can lead to a consensus between physicians regarding the claimant's functional capacity. Similar findings and similar conclusions drawn by multiple physicians add to the credibility of an assessment of the claimant's functional ability. If disability claim specialists review medical records using the principles of consistency, consensus, and credibility, then they will be in a better position to make an accurate assessment of the claimant's functional capacity, and ultimately the appropriate claim decision.

Russ Stogsdill *is a graduate of the Yale University Physician Associate Program. He has 10 years of clinical experience with four years being in internal medicine and six years in cardiology. He has been involved in medical file review for the past five years and has acted in an advisory capacity to two medical practices in the evaluation of electronic medical record and billing systems.*



Managing Disability Claims in the United Kingdom

David Pitcher, FCII, DMU(AMS)
Health Claims Bureau, United Kingdom

There have been significant changes in the management of disability claims in the United Kingdom (UK) since the early 1980s, a period when insurers experienced a rapid deterioration in morbidity experience. At that time, the majority of insurers offered "own occupation" cover and non-reviewable premiums. Claims managers relied on certificates of disability and reports from the claimant's General Practitioner (GP) to assess claims because, in the UK health system, all individuals have a GP who maintains their complete health records. GPs also were expected to supply certificates and reports for benefit claims under the State Disability Benefit scheme.

When insurers reviewed their experience, they found that though there had not been a significant increase in new claims, there also had not been a significant reduction in the number of existing claims. In 1989, the National Audit Office (NAO) published a report on State Disability Benefits. The report showed that their caseload had more than doubled since 1978/79 and costs had increased by more than 140%. They also noted a decrease in the number of claimants who actually recovered and returned to work.

Causes

Insurers concluded that the main causes of the deterioration in experience were:

- Unwillingness of the medical profession, particularly GPs, to provide certificates of disability. In 1992, Dr. Peter Toon* argued that providing certificates conflicted with the GP's role as the patient's advocate. In 1997, the chairman of the General Practitioner Committee of the British Medical Association (BMA) stated that "The multitude of demands from Government agencies, insurers and employers for information from GPs is putting a severe strain on the doctor-patient relationship." The BMA News Review launched a "Trust in Us" campaign in which two of the main aims were to (1) keep policing of disability out of general practice, and (2) uphold the GP's role as the patient's advocate. Thus, it became clear that insurers could not rely on the objectivity of the claimant's doctor to certify disability.

- The change in public attitude towards early retirement, particularly on the grounds of ill health, and the willingness of employers to allow it.
- Treatment under the National Health Service (NHS) which concentrated on relief of symptoms and not on rehabilitation to work. This was also associated with significant delays in arranging investigations and treatment.
- The increase in stress related disorders such as repetitive strain injury (RSI), chronic fatigue syndrome (CFS), and others. All of these conditions require treatment under the National Health Service (NHS) whose prime focus is not rehabilitation. This has been complicated by extensive media coverage of this subject in the UK, a lack of definitive diagnostic tests that confirm the diagnosis, and delays in arranging treatment.
- Increases in dishonest claims, fuelled by the recession in the early 1980s.

Action Taken

Having identified the causes of deterioration in claims experience, insurers took action to correct the situation. They

- ceased to accept GPs certificates as the only evidence of disability, except in the most obvious cases;
- sought objective evidence of disability, such as medical tests and facts, that could be assessed by the insurer's own medical advisers;
- sought independent medical reports and assessments;
- visited claimants in their homes, initially to investigate the claim and later to explore opportunities to get claimants back to work; and
- required early notification of disability so that the assessment process could be started before the claimant became conditioned to his/her disability and before decisions about lifestyle and retirement were taken.

The UK Government also changed the basis of assessment for State Disability Benefits. GPs certificates are no longer accepted after the first 28-weeks of disability and the claimant is required to undergo an independently administered "All Work Test" to continue to qualify for benefits. The Government also made State Disability Benefits taxable after the first 28-weeks. Implementation of these changes stabilised morbidity experience for insurers. However, after some initial improvement in the experience of the State Disability scheme, the overall result has been disappointing.

Taxation of Benefits

Having made the State Disability Benefit taxable, the UK Government intervened in 1996 by changing the tax basis for privately insured disability benefits. Until April 1996, benefits received under a personal disability insurance policy were taxable after they had been received for twelve months. Insurers replaced 75% of pre-disability earnings. Since April 1996, benefits payable under personal disability insurance cover have been received tax-free. While insurers have reduced the proportion of earnings they will replace for new policyholders, existing policyholders, who receive 75% of their earnings tax-free, are better off while receiving disability benefits, particularly if benefits are linked to inflation. Insurers are not able to reduce benefits under existing long-term disability policies and there is little incentive for claimants who hold these policies to return to work and give up tax-free benefits for taxable earnings.

Claims Management in the UK Today

Disability insurance carriers in the UK have strengthened the terms and conditions of their contracts. They require earlier notification of potential claims and have improved the definition of disability. There is more emphasis on rehabilitation in the terms of the policy and additional benefits have been included to guarantee assistance in returning to work.

Insurers have revised their premium rates to reflect current morbidity experience. Many insurers have introduced reviewable premiums that allow premium rates to be amended, from time to time, to reflect the overall experience of the portfolio. However, market competition is forcing many insurers to consider a return to non-reviewable premiums.

Insurers have recognized the importance of effective and equitable claims management to ensure the profitability of their portfolios and to provide efficient and user friendly claim services to their customers. The majority increased the resources available to their claim departments so that they could employ sufficient staff to review claims regularly. Some insurers also employ a specialist staff, some with nursing experience, to ensure that they are as effective as possible in their assessment and review of claims. Others have developed specialist teams to handle specific groups of claims, such as musculoskeletal, cardiovascular and mental disorders. In this way, the team members become expert in assessing and dealing with a particular type of claim.

Assessment of claims

Claims assessors take an objective view of the situation. They do not simply look at what the claimant cannot do or what the claimant has been advised not to do. Rather, claims assessors consider what the claimant can still do and whether it is possible to continue to work in the same or an alternative occupation. If the conclusion is that the individual meets the criteria for a claim, the goal is to determine what must be done to enable the claimant to return to work.

Visiting claimants

The value of personal contact with claimants has been recognized. This can be accomplished by telephone or by sending a representative to visit the claimant in his/her own home. The majority of UK insurers prefer a personal visit to the claimant's own home. Insurers either employ their own claim visitors or use the services of specialist providers. Visitors are either experienced insurance personnel or nurses who specialize in insurance work. Initial visits are made by pre-arranged appointment. Unannounced visits were tried but in many cases proved to be problematic and inefficient.

The initial visit is usually made shortly after the claim form is received. However, many insurers now arrange visits in order to help the claimant complete the claim form. This has the advantage of ensuring that all the information requested on the claim form is obtained and that the insurer has a clear understanding of the claimant's medical problems and the treatment required. The visitor makes sure the claimant understands the terms of the insurance and the claims procedure, and makes it clear that the insurer expects the claimant to recover in due course. They also emphasize that help will be provided during the period of rehabilitation and that the claim will be kept under review. Further visits are arranged during the recovery period to encourage the claimant to consider rehabilitation. Such visits are usually made by a staff member with some expertise in rehabilitation.

Insurers who utilise visits to complete the claim form report that these encounters have helped to improve the management of claims. For the most part, these visits have been welcomed by claimants who appreciate assistance with the claim form, the information provided to them, and the opportunity to ask questions. Improved understanding by both parties speeds the assessment of claims and avoids unnecessary conflict that might arise from the claimant's suspicion that the insurer will try and avoid the claim. Claim form visits are appreciated as an important service the insurer offers the policyholder.

Independent medical assessment

Insurers obtain independent medical assessments as early as possible in the process, either by arranging an examination by an appropriate medical specialist or by an organization specializing in functional assessment. The insurer's medical advisers become involved at an early stage and question unsubstantiated opinions expressed by the claimant's own doctors. This approach has caused some problems and claimants have complained that insurers are questioning the integrity of their physicians. However, given the views of the BMA, insurers can clearly justify these actions.

If delays are unavoidable in arranging tests or investigations under the NHS, private insurers will consider meeting the cost of undertaking the tests or investigations to expedite diagnosis and treatment. In some cases, insurers will consider assuming the cost of corrective surgery if there are long waiting lists under the NHS and if the surgery is likely to speed up the claimant's recovery. In many parts of the UK where there are considerable delays in providing rehabilitation services, insurers will also consider meeting the cost of physiotherapy and/or other rehabilitation services if this will help the claimant return to work more quickly.

Covert investigations

Very small proportions of claims are fraudulent from the start; other fraudulent claims arise when claimants recover but do not inform the insurer. Some of these claimants eventually return to work, but others continue to claim the benefit, in many cases misleading their own doctors by exaggerating symptoms and the limitations they impose. Direct observation by enquiry agents is an effective way of dealing with these situations. Video evidence is submitted that shows the claimant at work (at a different job) or participating in activities requiring a higher degree of function than has been admitted. Such objective findings provide compelling evidence if the matter is considered by an ombudsman or the courts.

Legislation and state help

The Disability Discrimination Act (DDA) prevents employers from unfairly discriminating against disabled employees and requires them to take appropriate steps to help disabled employees to return to work. This is relatively new legislation and its full effect has yet to be seen. Insurers try to work with employers to rehabilitate disabled employees, including providing employers with financial help to adapt the disabled employee's workstation or improve the employee's access to the workplace. The Government also provides employers with financial help to accommodate the needs of disabled employees.

In 1999, the Government launched the "New Deal" to help disabled people retain their jobs or find alternative employment. Personal advisers are provided to help the disabled individual identify work that he/she can undertake plus the steps needed to prepare for it. Pilot schemes have been introduced by the Department of Education and Employment (DEE) to test these methods and to assess the resources needed. Insurers have been working with the DEE to identify suitable clients and to help encourage disabled people to participate. If the pilot schemes are successful the DEE intends to extend the scheme nationwide in due course.

The Government's initiative helps insurers since more than one source of information and advice is available to disabled people claiming a benefit. Much remains to be done, but the Government has shown its determination to better control access to State Disability Benefits, a step that supports the actions taken by insurers.

The Next Steps

In order to continue to write profitable disability business, insurers must strive to manage claims effectively, improve communications with their claimants, and encourage people to return to work, either in their own or alternative occupations. The introduction of the "New Deal" has made insurers appreciate the benefit of an active rehabilitation program that reduces claim costs and restores claimants' self esteem by helping them return to work. Rehabilitation services are currently being developed in the UK. Few UK insurers are large enough to warrant their own extensive rehabilitation networks, and it is likely that insurers will form strategic alliances with rehabilitation service providers in order to deliver these programs.

There will be a significant role for case managers to help select suitable claimants for rehabilitation, to design the rehabilitation program and clearly define its objectives, and to keep it under review. Case managers will organize case conferences so that interested parties can exchange views, review progress, and implement changes if the program does not continue to meet the claimant's needs. The case manager may be a member of the insurer's staff or an independent specialist employed by the insurer on a case by case basis.

UK disability insurers have improved their management of disability claims and continue to seek further improvement. They have recognized that efficient claims management provides policyholders with good service at a difficult time and that this is a good marketing tool.

** Toon PD. Br J Gen Prac 1992;42:486-488.*

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Hepatitis C Virus Infection in Japan

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This is the final article in a three-part series that analyzes insured lives morbidity and mortality risk associated with chronic viral hepatitis. Previous articles discussed hepatitis C infection in Western populations (September 2000) and hepatitis B infection in China (November 2000).

Japan has the highest rate of hepatocellular carcinoma (HCC) of any industrialized country in the world. In 1995, HCC became the third leading cause of cancer death in males and the fourth in females, and the annual liver cancer death rate of 32,000 is expected to rise over the next 10 years. Research indicates that chronic infection with hepatitis C virus (HCV) is responsible for 50% to 76% of these cases.

The natural history of chronic HCV infection is controversial. Some experts have suggested that progression to end stage liver disease is inevitable; others have concluded that progression is restricted to a limited percentage of those who are infected. These opposing views are related to the different strategies used to study the natural history of infection. Retrospective series of patients with chronic, clinically obvious HCV infection suggest that serious or fatal outcomes are highly likely, but these studies have a strong bias toward selection of the most severe cases. In contrast, prospective and combined retrospective-prospective studies that begin with acute HCV illness have identified serious complications in a relatively small proportion of infected persons. These reports provide a much better indication of outcome for the typical HCV infected person, and they represent the principal data source for this analysis.

Description of Model

This article is a shortened version of a longer, more detailed discussion. The unabridged version and the accompanying references may be obtained by contacting the author.

A cohort simulation Markov model was created to estimate long-term morbidity and mortality risk associated with chronic HCV infection in otherwise healthy Japanese insurance applicants. There were few (if any) long-term prospective or combined retrospective-prospective studies of Japanese subjects with chronic HCV infection. This problem was addressed by: (1) using Western data to determine transition rates for patients infected at different ages and followed for durations of up to 25 years; (2) adjusting the data for what might be expected in a Japanese cohort; and (3) modeling different scenarios to gauge the sensitivity of calculations to different assumptions.

The model (Figure 1) contains 10 Markov states. Ninety percent[1] of subjects begin the model in the first state labeled "Active HCV infection, prior treatment failure." This means that interferon has been administered in the past, but active HCV infection persists as manifest by an elevated alanine aminotransferase (ALT) level and/or detectable serum HCV RNA. The remaining 10% of applicants begin the model in "Active HCV infection, no prior treatment." For this and all subsequent Markov states (except the three "Death" states), subjects are first exposed to the age- and gender-specific risk of expected death in an insured lives population based on the 1996 Japan Experience Mortality Table for males and females. Those who survive expected death remain at risk for other events in the Markov state. With the passage of each one-year cycle of the model, subjects gradually move into other (generally lower) Markov states, e.g., some are cured (sustained treatment response); some develop cirrhosis, decompensated cirrhosis (liver failure), or HCC; and some die. Table 1 lists annual transition probabilities which determine the rate at which subjects move from state-to-state.

Results

Estimated mortality experience

Figures 2-7 display estimated mortality ratios for Japanese males and females for underwriting ages 20, 40, and 60, respectively, according to different assumptions regarding the annual transition rate from active HCV infection to cirrhosis. The unabridged version of the paper also includes data for underwriting ages 30 and 50. Figures 8 and 9 display maximum estimated mortality ratios for HCV infected Japanese males and females, respectively, by age at underwriting. The basis for this "maximum" estimate is that (1) age-specific transition rates from active HCV infection to cirrhosis are at least two times higher (depending on age) than those reported in Western subjects, and (2) the cirrhosis to HCC transition rate is 0.03, a rate at the upper limit of what might be expected in Western cohorts.

Estimated morbidity experience

An assumption was made that total and permanent disability (TPD) would occur upon diagnosis of HCC or decompensated cirrhosis. Figures 10 and 11 display maximum estimated incidence rates of TPD for males and females, respectively, age 20 at underwriting, according to liver-related causes of disability. Figures 12 and 13 summarize maximum estimated incidence rates for all liver-related causes of TPD in HCV infected males and females, respectively, for ages 20 to 60 at underwriting.

Sensitivity Testing

Figures 2-7 indicate that calculations are sensitive to different transition rates from active HCV infection to cirrhosis, particularly at younger ages. Sensitivity testing was also performed to gauge the effects of different assumptions regarding (1) frequency and efficacy of treatment for active HCV infection and cirrhosis, and (2) transition rates from cirrhosis to HCC. Six scenarios are listed in Table 2 and calculations based on these scenarios are displayed in Figure 14. Scenario 1 is the baseline scenario for an HCV infected male age 40 at underwriting with a 0.016 annual transition rate from active HCV infection to cirrhosis (curve "0.016" in Figure 4). Shaded cells (Table 2) in scenarios 2-6 identify changes relative to Scenario 1.

Figure 14 indicates that calculations are not sensitive to variations in treatment of the magnitude that might be expected in the near future. Outcomes are essentially the same if treatment of active HCV infection varies from 10% to 20% (Scenario 2), if the ability to achieve a sustained treatment response varies from 30% to 50% (Scenario 3), if frequency of relapse after achieving a sustained response varies from 5% to 0% (Scenario 4), and if the percentage of applicants treated prior to application varies from 90% to 50% (Scenario 5). Calculations are sensitive to different assumptions regarding cirrhosis to HCC transition rates; an increase in this transition rate from 0.03 to 0.04 results in a peak increase of 20 mortality percentage points (Scenario 6).

Principal Findings

Insurability

The model suggests that morbidity and mortality experience would be within the insurable range for the majority of HCV infected persons. Mortality ratios are highest for cohorts at younger ages at underwriting, and generally slightly higher in males. The incidence of liver-related TPD increases at older underwriting ages, a finding in agreement with most studies worldwide that report more rapid disease progression with older ages at infection.

Risk greater than estimated by Figures 2-14

Morbidity and mortality risk would be greater and begin somewhat earlier (after underwriting) than projected by Figures 2-14. The model assumes that 90% of subjects are located in the Markov state "Active HCV infection, prior treatment failure" and 10% are located in "Active HCV infection, no prior treatment" at the time of underwriting, with subsequent progression per Figure 1. However, most insurance applicants would have been infected 10 or more years prior to the date of application. Some may have already developed significant liver fibrosis and perhaps even early cirrhosis, i.e., at the time of underwriting they would be "closer" to the date of HCV related complications.

What percentage of applicants with significant fibrosis and/or early cirrhosis would be detected during underwriting? The likelihood of identifying applicants at higher risk would depend on the extent of the underwriting evaluation, e.g., few or no laboratory tests vs. a full blood profile and AFP level, insurance examination to detect signs and symptoms of more advanced disease, a

physician's statement (particularly if a liver biopsy was performed), and liver ultrasound to detect cirrhosis and early HCC (especially in large amount cases).

Underwriting Considerations

Underwriting considerations are similar to those described in the September 2000 *Risk Insights* article. The principal points are summarized below.

- Approximately 15% of people infected with HCV clear the virus and have a full recovery. Eighty-five percent remain chronically infected (detectable serum HCV RNA). There are two patterns of chronic infection: chronic HCV hepatitis with persistently normal serum ALT (25%), and chronic HCV hepatitis with elevated serum ALT (75%).
- "Persistently normal ALT levels" in an applicant with chronic HCV infection is defined as "ALT and AST levels within the normal range on several occasions measured at least 1 month apart, over a total period of at least 12 months." Applicants with chronic HCV infection and persistently normal ALT levels generally have a favorable prognosis because progression to cirrhosis is very slow.
- For applicants with chronic hepatitis and elevated ALT levels, prognosis depends on whether or not cirrhosis occurs, which in turn is related to the rate at which liver fibrosis develops. Age at infection and gender (variables used in the Markov model) correlate with disease progression, as does heavy alcohol intake, but neither ALT levels nor clinical parameters help underwriters estimate the degree of risk.
- Daily alcohol consumption is strongly associated with more rapid progression, even with persistently normal ALT levels.
- If a liver biopsy was performed, risk classification can be greatly enhanced by reviewing the actual biopsy report.
- Prognosis is favorable for subjects who achieve a sustained remission after treatment, but there is a risk of relapse during the first 5 years. The Japanese literature reports a very small residual risk of HCC for patients who have been in remission for more than 5 years.
- HCV genotype 1 is associated with a poor response to anti-viral therapy. The association between genotype and severe liver disease is still controversial.
- Viral load (HCV RNA level) does not significantly influence rate of progression.

Table 1. Annual transition probabilities, male and female unless otherwise stated

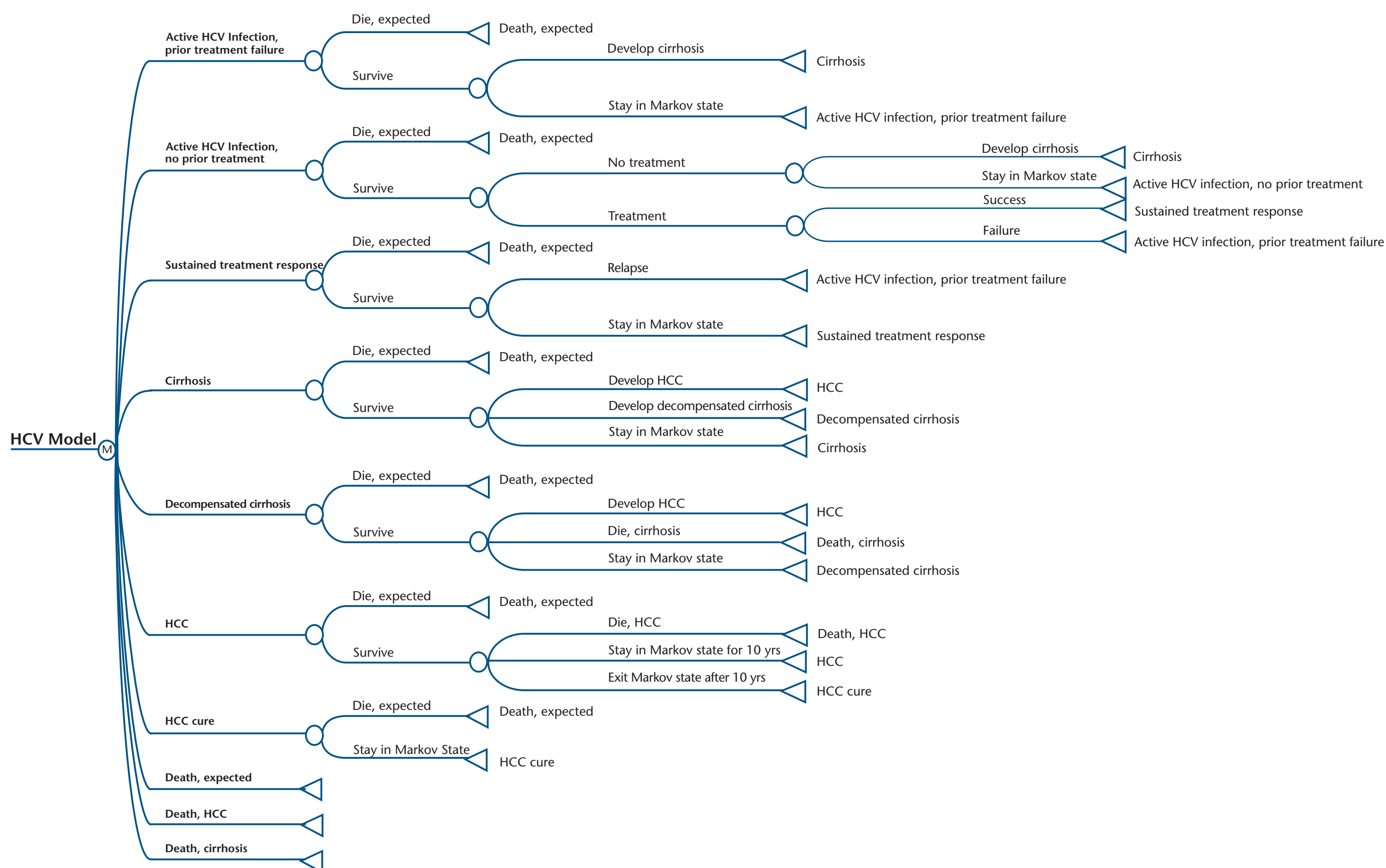
Transitions	Transition rate (range)
Expected death	Per mortality table
Active HCV infection to cirrhosis	—
Male (by age at infection)	—
20	0.004
30	0.008
40	0.016
50	0.032
60	0.064
Female (by age at infection)	—
20	0.002
30	0.004
40	0.008
50	0.016
60	0.032
Treatment of active HCV infection	0.10
Sustained response after treatment of active HCV infection	0.30 (0.15-0.40)
Relapse after sustained response	0.05 (0.04-0.10)
Cirrhosis to HCC	0.030 (0.044-0.07)
Cirrhosis to decompensated cirrhosis	0.023 (0.023-0.054)
Decompensated cirrhosis to death	0.129
HCC mortality, surgery	—
Year 1, male/female	0.551/0.527
Year 2, male/female	0.311/0.313
Year 3, male/female	0.300/0.277
Year 4, male/female	0.217/0.168
Year 5, male/female	0.253/0.124
Year 6, male/female	0.206/0.243
Year 7, male/female	0.154/0.103
Year 8, male/female	0.180/0.130
Year 9, male/female	0.136/0.097
Year 10, male/female	0.178/0.279

Table 2. Effects of different rates of HCV treatment and success, and a different transition rate from cirrhosis to HCC, compared to baseline assumptions (scenario 1) for a 40-year-old Japanese male*

Transition	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Active HCV infection to cirrhosis	0.016	0.016	0.016	0.016	0.016	0.016
Treated prior to application	0.90	0.90	0.90	0.90	0.50	0.90
Treatment of active HCV infection	0.10	0.20	0.10	0.10	0.10	0.10
Sustained response after treatment of active HCV infection	0.30	0.30	0.50	0.30	0.30	0.30
Relapse after sustained response	0.05	0.05	0.05	0.00	0.05	0.05
Cirrhosis to HCC	0.03	0.03	0.03	0.03	0.03	0.04

*Scenario 1 contains the values used to calculate curve "0.016" in Figure 4. Shaded cells in Scenarios 2-6 identify changes relative to scenario.

Figure 1. Markov model used to estimate long-term morbidity and mortality risk in Japanese insurance applicants infected with the hepatitis C virus.



Conclusion

Morbidity and mortality are within the insurable range for the majority of HCV infected persons. Calculations in the model are sensitive to different transition rates from active HCV infection to cirrhosis, and from cirrhosis to HCC, but not sensitive to treatment frequency and success, or the percentage of people treated prior to application. A favorable prognosis is likely in applicants with persistently normal ALT levels. For applicants with chronic HCV infection and elevated ALT levels, clinical parameters do not provide a clear indication of prognosis, and data generated by the model are particularly useful for estimating risk in these cases.

**Interferon is standard treatment for patients with chronic HCV infection and almost all affected patients have been treated since Interferon became available after 1992 under medical insurance in Japan. Because underwriters in Japan generally do not know who has or has not been treated, the assumption in the model is that 90% of insurance applicants have already received Interferon but treatment has failed, i.e., they apply for insurance and ALT levels are elevated and/or serum HCV RNA can be detected. The remaining 10% of applicants have not been treated. The section entitled "Sensitivity Testing" examines the effect of different assumptions regarding the percentage of treated applicants.*

Robert Pokorski *is Vice President, Worldwide Medical Research & Development for GeneralCologne Re. He monitors the effects of new medical technologies and diseases on morbidity and mortality.*

Figure 2. Estimated mortality ratios for HCV infected Japanese males age 20 at underwriting, by transition rate from active HCV infection to cirrhosis.

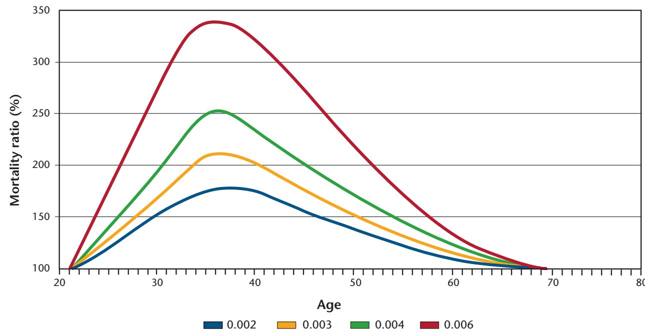


Figure 3. Estimated mortality ratios for HCV infected Japanese females age 20 at underwriting, by transition rate from active HCV infection to cirrhosis.

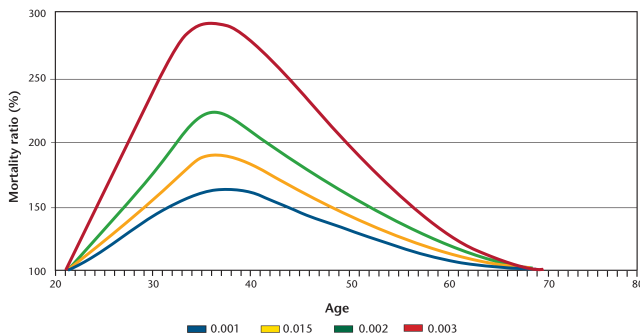


Figure 4. Estimated mortality ratios for HCV infected Japanese males age 40 at underwriting, by transition rate from active HCV infection to cirrhosis.

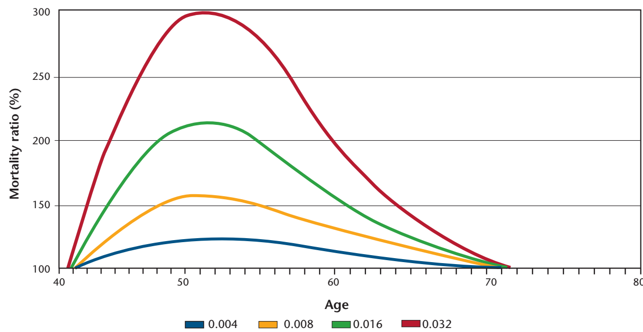


Figure 5. Estimated mortality ratios for HCV infected Japanese females age 40 at underwriting, by transition rate from active HCV infection to cirrhosis.

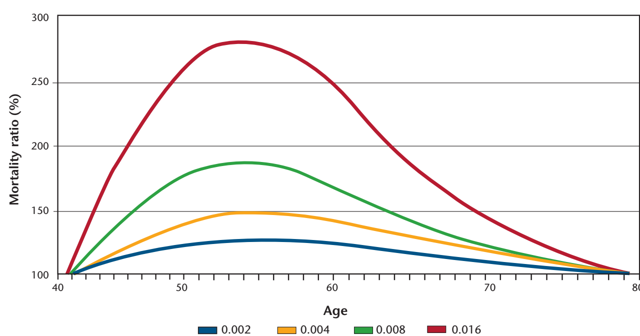


Figure 6. Estimated mortality ratios for HCV infected Japanese males age 60 at underwriting, by transition rate from active HCV infection to cirrhosis.

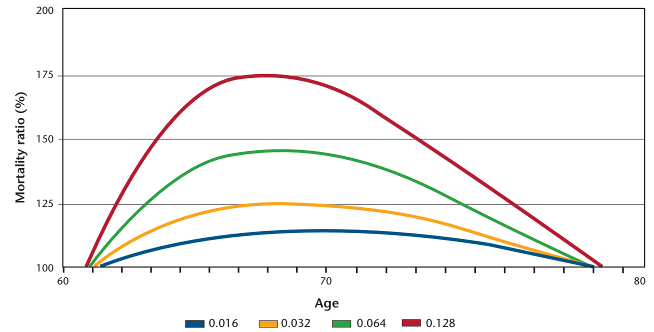


Figure 7. Estimated mortality ratios for HCV infected Japanese females age 60 at underwriting, by transition rate from active HCV infection to cirrhosis.

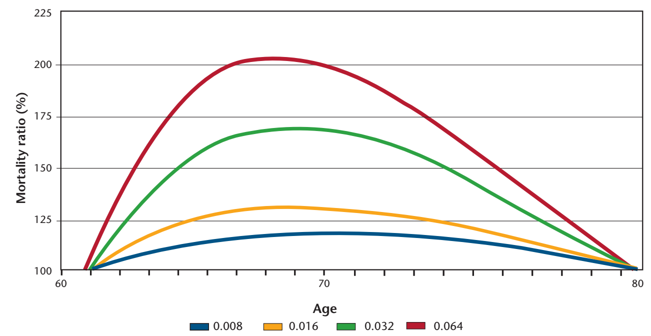
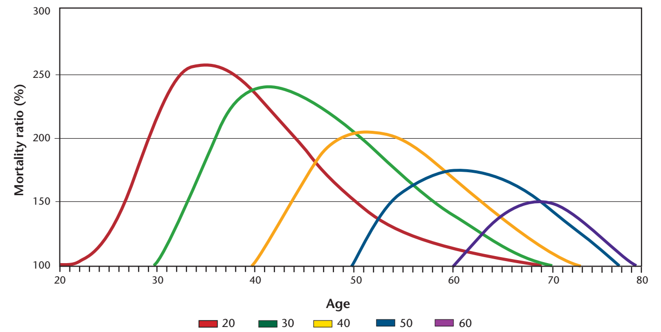
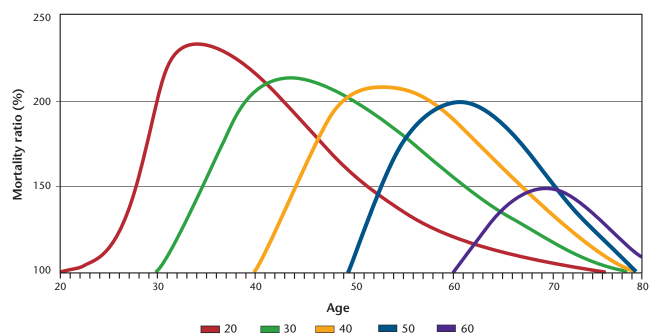


Figure 8. Maximum estimated mortality ratios for HCV infected Japanese males, by age at underwriting*



* Transition rate for age 20, 0.004; age 30, 0.008; age 40, 0.016; age 50, 0.032; age 60, 0.064.

Figure 9. Maximum estimated mortality ratios for HCV infected Japanese females, by age at underwriting*



* Transition rate for age 20, 0.002; age 30, 0.004; age 40, 0.008; age 50, 0.016; age 60, 0.032.

Figure 10. Maximum estimated incidence of total and permanent disability in HCV infected Japanese males age 20 at underwriting, transition rate from active HCV infection to cirrhosis equals 0.004

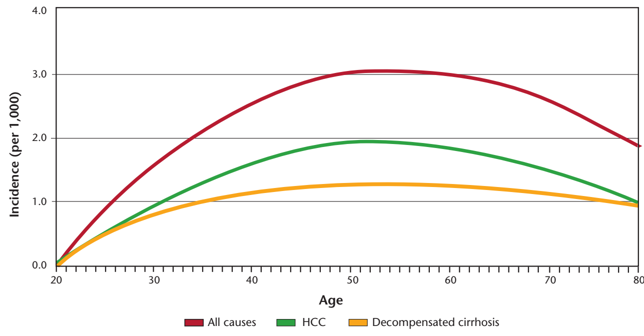


Figure 11. Maximum estimated incidence of total and permanent disability in HCV infected Japanese females age 20 at underwriting, transition rate from active HCV infection to cirrhosis equals 0.002

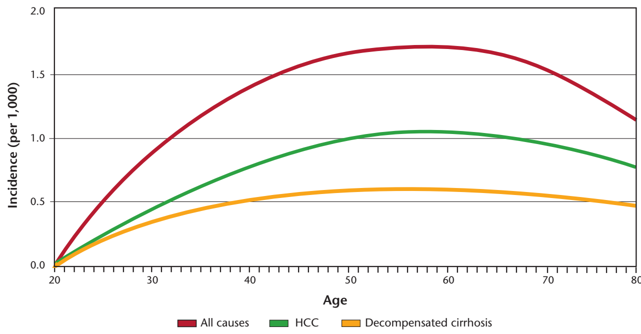
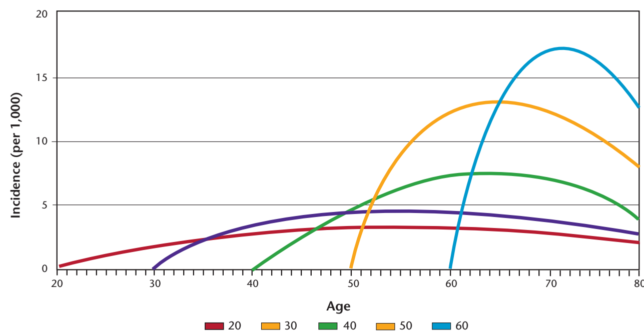
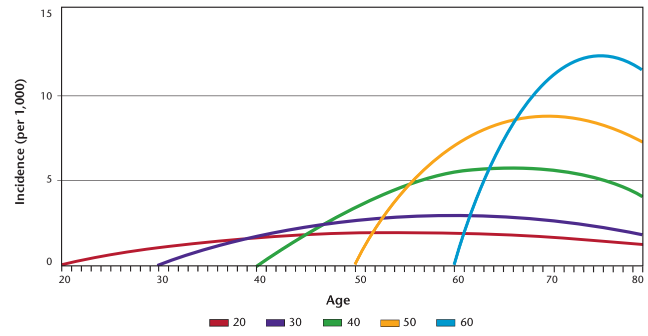


Figure 12. Maximum estimated incidence of total and permanent disability (all liver related causes) in HCV infected Japanese males, by age at underwriting*



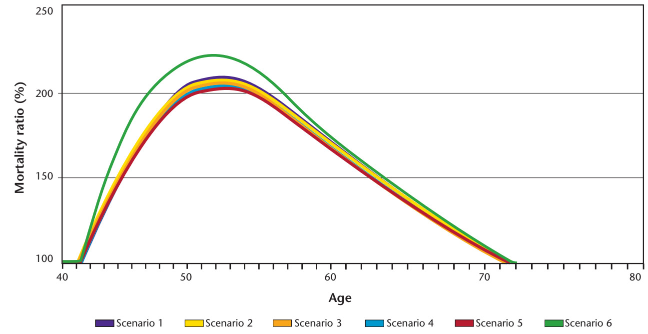
* Transition rate for age 20, 0.004; age 30, 0.008; age 40, 0.016; age 50, 0.032; age 60, 0.064.

Figure 13. Maximum estimated incidence of total and permanent disability (all liver related causes) in HCV infected Japanese females, by age at underwriting*



* Transition rate for age 20, 0.002; age 30, 0.004; age 40, 0.008; age 50, 0.016; age 60, 0.032.

Figure 14. Estimated mortality ratios for HCV infected Japanese males age 40 at underwriting, by scenario*



*Distinct values for Scenarios 1-4 cannot be visualized because the curves overlap.

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