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Genetic testing and insurance

The old actuarial joke goes something like

“What’s the difference between an English actuary and a Sicilian one?”

“An English actuary can tell you how many people in a room will die in the year”

“But a Sicilian actuary can tell you their names”

To me, it’s not so funny after all these years of telling and retelling. And I don’t doubt it is even less so for members of my profession who happen to be Sicilian. But imagine a world where science and technology had advanced to such an extent that it was possible to predict a time of death with certainty or at least within a very narrow range of confidence.

And imagine if that information was available on an app? Or through a paid-for test?

Insurance is a means of protecting against the adverse financial consequences of uncertain events. Through insurance arrangements, individuals reduce their exposure to the event by ‘pooling’ their risks with each other, paying a premium to the pool in exchange for the protection. Instead of each individual provisioning resources to cover their complete sum at risk (or face the consequential loss of that sum should the risk occur) an individual pays a much smaller premium to the pool reflecting the ‘average’ cost of the risk over the period. The pool is generally managed by an insurance entity which is able to guarantee the risk based on its own reserves and knowledge of the risks. The reserves of the insurer are a fraction of the aggregate provisions that individuals would need to make (or losses they might incur) if there was no insurance available because only a fraction of the maximum possible risk events are expected to occur in any period.

But in my imaginary scenarios, there is much more information available about the nature of the risk. So much, in fact, that losses can be predicted with near certainty. What then is the role of insurance in these circumstances? If an individual faces no uncertainty, what purpose would be served? And if the insurer knew for certain that the ‘risk’ event would occur in a period, it would surely set a premium at the level of the sum at risk for that period. Or would charge no premium at all if the risk was not going to occur during the period. It becomes a simple binary decision.

Unless, of course, the superior risk information that I envisage in my imaginary scenarios were not to be equally available to all parties. If this asymmetry worked in favour of the pool, it could set prices that would still appeal to the low risk individuals as a better bet than carrying the risk, even if these prices were way above the true cost of the risk. And it could further boost its profitability by choosing not to carry the risk posed by those high risk individuals.

On the other hand if the asymmetry of risk information worked the other way and the individuals were party to the risk information but the insurer was not, then there would be great opportunities for the high risk individuals to make a turn on their risk and less incentive on the low risk individuals to join the risk pool. In these circumstances the concept of risk pooling becomes unviable.

Of course the real world does not work like this. In practice individuals are put under an obligation to disclose facts material to their proposal for insurance. Whilst on the other hand one would hope that the insurers operate in a competitive market that would tend to drive prices down even where there was an asymmetry of risk information in favour of the insurers over the insured.

Yet in a world where so much more knowledge is available to individuals and health technology is moving forward at pace to provide health and lifestyle information, what counts as disclosable from a 'material facts' point of view? And if it were disclosable, would this deter the take up of valuable health and lifestyle tools?

There is a public health interest in identifying conditions early and applying medical interventions when they can be most successful and often less costly. But at what point does the information gathered in this way deter individuals from obtaining the economic benefits from risk pooling? And is that a matter for public policy too? A case in point is the use of genetic testing to identify an individual's susceptibility to certain serious medical conditions.

For several years now, the UK Government and the insurance industry in the guise of the Association of British Insurers (ABI) have negotiated and maintained a Concordat and Moratorium on Genetics and Insurance. This has now been replaced by a new [Code on Genetic Testing and Insurance](#). In it the Government and the ABI on behalf of its members jointly recognise that genetic testing is a valuable tool in informing the diagnosis, prevention and treatment of ill health and that people should not be deterred from accessing its benefits because of concerns this might compromise their ability to access insurance cover. The principles of the Code are that insurers will not put pressure on an individual to undertake a predictive or diagnostic genetic test in order to obtain insurance, and that the results of predictive genetic tests may only be considered in very limited circumstances where the specific test is listed in the Code and the sum to be insured exceeds a specified level set out in the agreement. Unlike the Concordat, the new Code has no expiry date and will be reviewed every three years.

It's great to see this co-operation continuing since in my earlier career in the insurance industry I became involved in the debate within the insurance industry and saw at close hand the interface with public policy and the influence of government.

Advances in medical, data and other sciences and in technology are changing our lives for the better and our financial systems need to evolve and adapt to keep pace. Government often has a role and certainly has an interest in maintaining both a viable, thriving and constructive financial sector and a society that is both fair and just. My imaginary world is coming closer in many areas where insurance has hitherto operated in a world of uncertainty. Technology, as we have seen, is enabling us to reduce that uncertainty and thereby challenge the value and purpose of insurance which in turn raises questions of public policy.

Where insurance and risk intersect with such matters it is often helpful to have impartial experts who understand and can explain the implications of those advances in an unbiased way.

Sometimes these people are actuaries, sometimes they are government actuaries but hopefully not those of the stereotypical Sicilian variety!