



# Student

**Maciej Zabój** looks at how personal monitoring devices could revolutionise preventive health insurance

## The doctor in the data



**T**he traditional pricing model works to capture policyholder data during the quotation process. This means that the risk is assessed at that point in time, with a predefined discriminating factor (such as smokers vs non-smokers). This data may be updated following results from health assessments (such as blood tests) to assess whether, say, a non-smoking habit has changed.

Preventive life insurance takes a different approach. The information gathered via the traditional approach – self-reported risks and habits – could be extended using data obtained from a personalised monitoring device. Currently, these devices track basic health factors, such as sport activity, pulse, blood pressure, body temperature and oxygen saturation. They are available at relatively low cost, and the credibility of the information they provide is reliable. This could allow risk pricing to go beyond traditional demographic segmentation and move towards a new approach incorporating behavioural patterns and sociodemographic characteristics.

**“If the wearer’s vital signs fall to critical levels, it could draw the attention to the policyholder, medical personnel and people nearby”**

The real-time data would provide a great opportunity for actuarial data analysts to define and update predictive models on a regular basis – though any approach to gathering and processing data must follow general data protection and anti-discrimination regulations.

This would allow us to set the initial premium on the basis of past data and adjust it as the risk changes, combining a simplified life questionnaire, past data from a personal electronic device, and online activity into the premium calculation.

The pricing process could incorporate unsupervised machine-learning techniques to identify the relationships between

different sources of data. Updates could also be available at the policyholder’s discretion – for example, when a new risk is being included. This would allow insurers to define specific actions and test the effectiveness of potential claims incidence and value – as well as support the predictive model.

Aside from the risk, expenses may have quite a substantial impact on pricing, especially taking into account the overheads involved in implementing a new business model. However, the preventive effect should lead to lower claim frequency and average claim payment, pushing costs down in the long term.

A huge benefit to regular health monitoring devices would be the associated improvement in life expectancy. If the wearer’s vital signs fall to critical levels, it could draw the attention to the policyholder, medical personnel and people nearby. Time is of the essence when it comes to heart attacks and strokes; if warnings could be immediately issued to local first responders, they could get to the wearer much faster, mitigating the negative consequences of the insurance event.

Wearable devices could help medical services to determine exactly where the policyholder is, and by prolonging life expectancy, would help to run down premiums. It could also help extend the policyholder’s product offer, based on their personal behavioural patterns and attitude to risk.

Implementation of this new business model could work in favour of both policyholders and insurance companies. A policyholder could receive valuable and regular information about their health status – prolonging their life expectancy in certain cases, and helping them to pay an lower regular premium overall.

For insurance companies, this model could mean lower claim payments and higher quality data with which to price risks.



**+**  
**MACIEJ ZABÓJ**  
is a guest student editor