somewhat
di₊₊erent

Do you track your digital health data?

Is digital health data accurate enough for insurers?

In the UK market, there has been a sharp rise in consumers using wearables and health apps. This is opening up opportunities to embed data from these devices into the life insurance value chain. Lisa Balboa explores whether digital health data is accurate enough for insurers to rely on.

Digital health data is on the rise

Wearables and health app adoption has increased significantly in the UK over the past year. 40% of consumers now own a wearable device, up from 31% last year[1]. Health app downloads have increased by 25% with consumers keen to keep on top of their health since the onset of the Covid-19 pandemic[2].

40% of consumers now own a wearable device[1]

25% increase in health app downloads since March 2020[2]

Image source:
Adobe Stock

hannover **re**®

Leveraging data from apps and wearables could be game changing for life and protection insurers. A **previous edition** of ReCent UK Insights explored how wearables are opening up opportunities to improve underwriting and pave the way for insurers to partner with customers in understanding and managing their long-term health. Before embedding digital health data into the heart of insurance propositions, it is important to take a step back and consider whether the data from these devices is accurate enough.

Can consumers be trusted?

Years ago when consumer wearable devices started gaining traction, it was easy to fool the step count by simply shaking the device up and down. Since then, researchers have specifically focused on developing algorithms that can detect this sort of deceptive behaviour[3].

In addition, devices are becoming more sophisticated. Wearables can do more than measure activity through pedometers, gyroscopes and accelerometers. Sensors that measure a broad range of biometric variables such as optical heart rate sensors, ECG sensors and SpO2 monitors for blood oxygen levels are increasingly becoming the norm in wearable devices. This greater range of measurements makes it much easier to detect if the consumer is misusing their device. Individuals have their own physiological hallmarks. This means insurers should be able to detect if a customer lent their device to a friend in an attempt to falsely report a healthier lifestyle.

Rather than consumers trying to 'cheat' their wearable device, a bigger concern may be consumers not wearing their device at all. Consumers forgetting to use their wearable or losing motivation to engage with health apps will lead to missing data. This causes problems if an insurer is aiming to use digital health data to assess customers' claims risks on a continuous basis. To overcome this, insurers can offer their customers incentives to engage. They can also share personalised health insights from the data with the customer. This helps policyholders to see the continued value in engaging with wearables and health apps, and sharing their data with the insurer.

Are wearable devices accurate?

With so many different wearable devices available for consumers to choose from, it is important to consider which devices are the most accurate.

The consumer study from Which? provides a striking example of how accuracy can vary between devices[4]. The study looks at more than 100 different devices. It found some wearables under-report distance by more than 40%.

> If you were running a marathon, that's equivalent to having to run 37 miles instead of the usual 26.2 miles!

Moreover, a systematic review of more than 150 publications highlights that inter-device accuracy is an under-researched area[5]. This could pose challenges if an insurer is looking to adopt a device agnostic solution that allows customers to use and share data from their own wearable device. When analysing data from a range of wearables, insurers will need algorithms to detect and adjust for differences in measurements between devices.

Research also suggests that wearable measurements are likely to be more accurate during rest periods rather than periods of activity[6]. This is a drawback for elite athletes looking to track their performance in each individual exercise session. However, it suggests wearables data is a good fit for insurers when it comes to building up a long-term view of customers' chronic health risks.

A use case for data from overnight sleep is to detect onset of infection. Once devices have been tuned to an individual's physiological baseline during sleep over the course of a few weeks, then customers can be alerted to acute changes in their health. LifeQ, a strategic partner of Hannover Re, has developed an app that can flag potential Covid-19 onset. This feature is live for participating customers of South African insurer 1Life who wear a Samsung Galaxy Watch Active2 wearable device[7].

Can apps replace medical assessments?

There are also smartphone apps being developed to measure health-related variables. One example is apps using transdermal optical imaging technology to measure vital signs in real-time. Using a video selfie from the smartphone's camera, these apps provide insights into health measures such as an individual's blood pressure and heart rate. As many of these health apps are new, before embedding them into insurance, it will be important to validate data accuracy as compared to mainstream medical devices used to measure vital signs. It will also be important to confirm that the accuracy of this technology holds across a wide range of groups.

Provided accuracy is established, there is potential to use this technology to speed up the underwriting process. Some insurance applicants might be able to use an app to provide insights into their vital signs at point of application, rather than attending an in-person medical screening assessment. Insurers could also use these apps as tools to engage with customers, periodically finding out about their health and supporting customers in identifying and managing risk factors for chronic disease.

Embedding digital health data into insurance

Digital health data is accurate enough for insurers to start to embed this into their propositions. Having algorithms that take into account the type of wearable device being used is important. If an insurer is moving towards relying on new health apps as alternatives to GP reports and traditional clinical screening tools, then pilots are valuable to ensure accuracy levels are as expected.

Wearables and apps have the potential to provide rich ongoing insights into customers' health beyond data gathered at point of entry underwriting. So the question is, in a few years' time, could an insurer accurately manage claims risks without digital health data?

Follow us on LinkedIn to keep up to date with the latest Life & Health news.

Author

Lisa Balboa
Business Development Actuary, Protection
Tel. +44 20 3206 1837
lisa.balboa@hannover-re.com

Connect with me on LinkedIn

References

1. https://www2.deloitte.com/uk/en/pages/press-releases/articles/lockdown-purchasing-sparks-fastest-ever-rise-in-uk-technology-ownership.html
2. https://www.orcha.co.uk/media/1746/covid_report_jan_2021_final-version.pdf
3. https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0144795
4. https://www.which.co.uk/news/2019/04/marathon-training-here-are-eight-fitness-trackers-to-avoid/
5. https://mhealth.jmir.org/2020/9/e18694/
6. https://www.nature.com/articles/s41746-020-0226-6
7. https://news.samsung.com/za/1life-lifeq-and-samsung-south-africa-launch-covid-19-screening-app-as-sa-is-expected-to-enter-a-3rd-wave

www.hannover-re.com