Digital health and disability claims

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Abstract

Digital technology is starting to enable new and improved modes of healthcare delivery. The healthcare and disability claims spaces are closely intertwined. Disability claimants certainly have healthcare needs but disability claims management has the added dimension of supporting return to work.

In this paper, we explain what is meant by the term "Digital Health." We then compare the challenges in the healthcare and disability claims management spaces where digital technology may improve outcomes. We touch briefly on how the efficacy of digital technology may be evaluated. The later parts of the paper focus on Digital Health technology providers who have engaged with the insurance industry and we conclude with some learnings around the challenges of implementing these technology-based opportunities.

This paper focuses on interventions once a policyholder's health has failed to the extent that they need to claim. There are many opportunities to improve wellness and prevent claim using digital technology, as noted by the IFoA Wearables and Internet of Things Working Party,[1] and we do not discuss these further this paper.

Keywords

Digital health; Income protection; Disability; Claims

1. What is Digital Health?

Digital Health involves the use of information and communication technologies to improve health and care outcomes.[2] The term is often used interchangeably with "ehealth."[3] The clinical value of these tools is derived from continuous monitoring of health metrics, while the proliferation of smartphones, wearable biosensors and connected devices explains their popularity. Chatbots and digital personal assistants are increasingly used to deliver robotised healthcare and as a gateway to virtual patient-doctor services.

[1] https://www.actuaries.org.uk/practice-areas/health-and-care/research-working-parties/impact-wearables-and-internet-things

[2] Digital Health & Care Institute website http://dhi-scotland.com/about-dhi/what-is-digital-health/

[3] http://www.who.int/goe/en/ WHO Global Observatory for eHealth

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Table 1. Definitions of Digital Health

Technology Category	Definition	Example
Health information technology	Health information management across computerised systems and the secure exchange of health information between patients and medical experts	Electronic health records
Mobile health (mHealth)	Use of mobile phones and other wireless technology to support medicine and care delivery[4]	Appointment reminders
Telehealth	Use of a broad range of technologies and services to provide patient care and improve the healthcare delivery system as a whole. The term includes remote healthcare services as well as non-clinical services[5]	Video consultations Electronic training for clinicians
Telemedicine	Use of electronic communications and software to provide clinical services to patients without an in-person visit	Video consultations (telemedicine is a subset of telehealth)
Telecare	Use of communication and information technologies to offer support and assistance remotely[6]	Personal alarm (the user can call an emergency response centre for help by touching a button worn around the wrist or neck)
Wearables	Electronic technologies or computers that are incorporated into items of clothing and accessories which can comfortably be worn on the body.[7] These may be linked up to mHealth technologies	Activity trackers Continuous glucose monitors Fall alarms

Digital health includes mHealth, telehealth, telemedicine, telecare, health information technology and wearables. Table 1 defines and gives an example of each of these sectors. In practice different organisations use these terms in different ways, sometimes interchangeably.

2. Challenges in Healthcare and Disability Claims Management

In their 2014 strategy paper "Personalised Health and Care 2020,"[8] the UK's National Information Board noted that "better use of data and technology has the power to improve health, transforming the quality and reducing the cost of health and care services."

The Digital Health & Care Institute of Scotland describes the improvements that can be made in health and care through use of digital technology.[9] There are clear similarities between the aims of the healthcare system and those of insurers. These are compared in Table 2.

We sketch out some examples of specific problems where a digital solution could improve outcomes or reduce cost.

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[8] Personalised Health and Care 2020: Using Data and Technology to Transform Outcomes for Patients and Citizens: A Framework for Action (2014) https://www.gov.uk/government/publications/personalised-health-and-care-2020.

[9] Digital Health & Care Institute website, http://dhi-scotland.com/about-dhi/what-is-digital-health.

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Table 2. Comparisons of Healthcare and Insurance Aims

Healthcare System Aims	Insurer Aims
Increase quality of care	Improve timeliness, consistency and effectiveness of claims decisions and interventions
Reduce costs	Reduce length of time on claim
Improve access	Improve communication channels
Reduce inefficiencies in delivery	Reduce inefficiencies in the claims assessment process
Make services more person-centred	Improve customer satisfaction

Cost pressures in the healthcare system mean that therapy may not be available at the time it will be most beneficial to improve prospects of recovery and return to work. Insurers already fund private interventions, such as physiotherapy and cognitive behavioural therapy, to aid rehabilitation.

A number of disease-specific health apps are available which may be effective at replacing or enhancing traditional face-to-face therapies. In the mHealth space, disease-specific health apps are available, including mental health and pain management apps.[10] As at end of July 2018, there were 19 mental health apps in the NHS Apps Library (Beta).[11] Later in this paper, we give an example of how wearable technology can help with this challenge.

Delays in the notification of claim to the insurer reduces scope for early intervention to aid rehabilitation and negatively affects customer satisfaction as there are delays to payment of insurance benefits. A digital solution, perhaps in the mHealth space, would be quicker and more convenient for the claimant than paper forms or telephone calls. In the Group Income Protection space, some insurers already make use of online portals to record employee absence. An alert is triggered and the insurer reviews these when someone is off for prolonged periods or has an unusual pattern of absence.

Claims assessors use medical records to understand the claimant's current medical conditions as well as whether historic medical conditions were correctly disclosed at underwriting stage. The process for accessing GP and consultant records still relies on paper forms and reports and the postal system, as well as the doctor's willingness and capacity to respond quickly. Even a simple check to ascertain whether the claimant is indeed registered at a particular GP practice can take some time. These delays affect how quickly the claimant can start receiving insurance benefits, creating financial hardship, and also delay any rehabilitation interventions that the insurer may propose. Various forms of technology may help to solve this problem. Telehealth may enable the insurer to contact the doctor over the phone. mHealth may allow the GP and claimant to contact the insurer during the consultation to transmit relevant information, possibly via the claimant's device. An example that has

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[4] http://www.who.int/goe/publications/goe_mhealth_web.pdf
[5] https://www.e-idsolutions.com/difference-telehealth-telemedicine-telecare/
[6] https://www.tsa-voice.org.uk/consumer-services/what-is-telecare
[7] http://www.healthcaretechnologies.com/health-tech-what-are-wearables-in-healthcare
[10] The Growing Value of Digital Health in the United Kingdom – Evidence and Impact on Human Health and the Healthcare system, IQVIA Institute report (November 2017).
[11] https://apps.beta.nhs.uk

been used in practice is admission of a fracture claim using photographs of a hospital discharge record and of the fractured limb, which were sent to the insurer via the claimant's mobile phone. A further possibility is allowing claimants or insurers to get direct access to medical records using Health Information Technology but this comes with challenges, particularly around addressing concerns about data privacy and filtering out sensitive information that is not relevant to the insurer. This solution perhaps lends itself to simpler information requests, such as confirmation of length of GP registration.

In future, it may be more convenient to obtain medical data from technology-based sources, rather than from doctors. In some cases, the doctors may not even hold all the relevant medical information as digital healthcare solutions gain wider use.

The claims process could improve if the claimant, claims assessor, rehabilitation provider and any other relevant parties could see progress on a case to ensure timely response and prevent unnecessary calls and follow ups. This could include dates of any medical appointments to ensure appropriate timing of requests for information. There may be further efficiencies if this information can be transmitted via digital means of communication. Health Information Technology and mHealth can play a role here.

3. Evaluation of Efficacy and Value of Digital Technology

While digital technology offers the opportunity to improve outcomes, it is important to be selective to ensure safety and cost-effectiveness and also that ethical and privacy considerations are taken into account.

Since 2007 at least 571 app efficacy studies have been published and activity continues to accelerate. Health apps for diabetes, depression and anxiety have shown positive results in multiple randomised controlled trials as well as multiple meta-analysis studies and are therefore considered to meet requirements for inclusion in standard care recommendations. Apps for a number of other conditions, including cancer and cardiac rehab, have shown promising results in at least one randomised controlled trial.[12]

NHS England is in the process of developing a framework for the evaluation of effectiveness and value from digital health innovations.[13]

4. Examples of Technology-Based Opportunities for Improved IP Claims Management

It is at point of claim that insurers make a difference, providing tailored support to help individuals with rehabilitation and a return to work. The expertise of claims assessors is rooted in classical

[12] The Growing Value of Digital Health in the United Kingdom – Evidence and Impact on Human Health and the Healthcare system, IQVIA Institute report (November 2017).
[13] https://digital.nhs.uk/blog/transformation-blog/2018/evidence-for-effectiveness-in-digital-health-innovations

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clinical inputs, linking claimants to health professionals in an analogue way. Digital technologies can augment and support these traditional methods.

Chatbots and virtual assistants have potential in IP claims assessment, in a similar way to AI-powered doctor apps and online doctor services. Chatbots can gather a patient's past medical history and current symptoms, and provide a likely diagnosis and advice on treatment options. Soon linking up the digital outcomes of AI doctor consultations to traditional medical records will be crucial for IP claims assessors. Already some general insurance claims are automated using virtual assistants.

Apps help promote compliance with treatment by sending reminders about medication or appointments, regardless of the person's location. And they can provide welcome distraction or link people with social networks at times of stress.

Apps that connect to sensors add robust data about movement and activity, or mood. Apps are cheaper than drugs to make and maintain. They reduce the variability of therapeutic response among patients and have no side effects. Apps that match clinical guidelines are most likely to be effective in use and accepted by users.

Technology allows claimants to monitor the ebb and flow of their symptoms and plot progress to recovery, and not only measuring progress in episodic clinical interventions or visits at home. Continual digital intermediation will limit the influence of good-day-bad-day reporting and therefore increase transparency in IP claims. Intervention, support and rehabilitation can begin at once rather than when an appointment is available. Digital therapy can be calibrated to suit each individual responding to what works for them and, crucially, what does not. It also seems likely that even after return to work, sustained use of an app by a policyholder will help prevent relapse and secondary claim.

Disorder-specific apps that provide therapy for mental health and musculoskeletal conditions are of most interest to insurers in a disability claims setting. For example, the app available from Thrive, integrates clinical pathways for resolving mental health issues and building resilience. Mental health platform provider Monsenso allows for remote intervention and tracking through a smartphone. Apps from TrackActive, AIMO and InjuryMap offer elegant digital solutions for musculoskeletal risk assessment and rehabilitation.

Technology will reduce the amount of manual work involved in assessing an IP claim. There are long-term benefits for insurers too in the rich customer data that will be generated. Analysis of the data will provide predictive intelligence to help deliver better value and service to new claimants. It will help to anticipate claims and give focus to providing effective interventions. Ultimately IP claims solutions delivered using AI or other digital means will save process costs that can be passed on to customers in the form of reduced premiums. Technology will also provide new methods of claim authentication and mobile payments, with blockchain smart contract solutions emerging to prevent fraud and automate settlements.

5. Challenges to Implementation

Insurers face challenges working with startups. A fundamental decision is which to choose. More than 550,000 new startup businesses were established on average each month in 2016. It is estimated

that FinTech/InsurTech related startups account for 30,000.[14] Despite the successes, there is a high failure rate. Amongst UK startups – just over half fold within three years.[15] Most solutions that could apply to disability claims process broadly similar data derived from the hardware and software available today, notably smartphones and apps. Technological and functional obsolescence will ultimately see these replaced with better solutions. For IP insurers with long-term commitments, linking to an uncertain enterprise environment exploiting endlessly evolving devices and platforms represents a risk. While curiosity for digital technology is driven by FOMO (fear of missing out), FOBO (fear of a better offer) is the more powerful sentiment that holds the industry back.

Startups face challenges too. The life insurance industry is complex, regulated and has high barriers to entry. Many entrepreneurs lack insurance knowledge but sense their opportunity. Most have sufficient funds to build only a partial solution until securing a pilot with an insurer to fully finesse their art. While this fluidity is a natural feature of a startup, part-developed ideas can be baffling to mainstream companies accustomed to fully formed solutions. Startups need to find insurers willing to engage in test and learn projects and a commitment to deploy.

For consumers too there are matters of concern. Chief among them is about the control, exchange and use of their personal data. Healthcare is being transformed by advances in artificial intelligence, virtual reality, machine learning, sensors and other innovative technologies. Practically everybody has a smartphone, making it easier than ever to gather data and consent to third-party access. Eventually people will expect their insurers to do something useful with this. Unique data insights mean providers can offer people products and services tailored to them individually. Disability claims management seems an obvious candidate.

The established methods for managing IP claims continue to work well and are not so simply replaced. New ideas must be every bit as good if not better; enhancing the process of submitting, admitting and managing claims making it all speedier, more convenient, cheaper and transparent.

6. Conclusions

For IP insurers, digital technology offers new ways to manage claims that relies less on face-to-face and traditional clinical assessment; this is why there is so much interest in understanding how innovation might work. The ideal approach is collaboration to help startups mature their technologies in ways that fit best to the needs of IP insurers before plugging them into existing systems using open application programming interfaces. Technology solutions offer insurers a chance to move from old fashioned form-filling claims assessments to more convenient and transparent interactions that bring enhanced data management capabilities.

Acknowledgements

[14] VanderLinden. S, *et al.*, The InsurTech Book, 2018, FinTech Circle Ltd, Wiley.
[15] https://techround.co.uk/startups/2016/21/12/why-start-ups-fail-in-the-uk/