The future of healthcare

Digital healthcare report 2022

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Executive summary: Focus on the growing digital healthcare market

> **CFC's digital healthcare enquiries are expected to outpace traditional healthcare cover within the next year. This marks a momentous shift in the market that will only continue to escalate in the coming years.**

This report examines the claims and enquiry data from the last five years that CFC's eHealth policy has been active. Using this data means we can assess the factors driving growth and highlight the territories where growth is most prevalent. The report also details sector trends we are seeing accelerate at a faster rate, and the most common types of claims. Using this experience and data, we've also addressed future opportunities and risks in the digital healthcare industry.

Key findings:

- Digital and hybrid healthcare enquiries are set to surpass traditional healthcare enquiries
- Artificial intelligence (AI) sector has had a 32% increase in policy and enquiry count over the last year
- AI-related intellectual property (IP) claims are set to outpace traditional medical negligence claims
- In 2021, our frequency of healthcare cyber claims was 4x larger than in 2020
- The legal and regulatory landscape has become more complex and stringent

The current landscape

CFC launched their global digital healthcare insurance proposition in 2017, having identified that traditional healthcare insurance policies were struggling to draw clear lines between the medical malpractice, technology, and cyber liabilities borne by many insureds. CFC was one of the first insurance providers to offer digital healthcare and cyber insurance, and with over 20 years of expertise in the healthcare industry we were quick to notice the gaps in coverage.

Digital healthcare has forced its way from the margins to become a mainstream part of everyday life.

We know the world is changing fast and as pioneers in emerging risks, we are passionate about pushing boundaries, thinking differently, and building insurance policies that are fit for today's risks.

Companies in this space often have evolving business models and a desire to reach a global audience – this often presents challenges due to a rapidly changing risks landscape and jurisdictional differences.

At CFC, our singular underwriting unit can tailor solutions based on our global understanding of the sector to best assist our brokers and policyholders.

The global healthcare market

$175.6bn

was the recorded worth of the global digital healthcare industry in 2021

The global digital healthcare market was worth $175.6 billion in 2021 and is projected to grow at a compound annual growth rate of 27.7% from 2022 to 2030 (source link).

$1bn

is the current valuation of healthcare start-ups

With healthcare start-ups being valued at $1bn – four times the figure it was five years ago – the industry is not showing any signs of slowing down (source link).

$250bn

of the US healthcare spend could be virtualized

The US has been at the forefront of the digital health boom. In April 2020, the number of virtual visits was a stunning 78 times higher than it had been just two months earlier, accounting for nearly one-third of outpatient visits. It's estimated that approximately $250bn, or 20%, of the healthcare spend could be virtualized (source link).

$17.8bn

has been raised by Canadian healthcare start-ups

In Canada, healthcare start-ups have raised $17.8 billion in the last year. There has been huge demand for telehealth and virtual care services, and it's estimated digital health spending will more than double by 2030 (source link).

£2bn

investment into the UK NHS app

The UK government has invested £2 billion into the National Health Service (NHS) app. The intention is to reduce medical backlog and waiting lists, by allowing patients to access healthcare records, receive GP messages, and attend 'virtual wards', all via the app (source link).

88%

of Australians are now willing to share their healthcare data digitally

With 88% of Australians now willing to share their healthcare data digitally, it represents a huge appetite for the adoption of digital tools. Australia is using a $107m investment to deliver their Long Term National Health Plan. The Australian National Digital Health Strategy focuses on the delivery of national infrastructure that enables data and technology to safely work for patients, consumers, carers, and healthcare professionals (source link).

Demand and enquiries: Digital and hybrid healthcare enquiries are set to exceed traditional ones

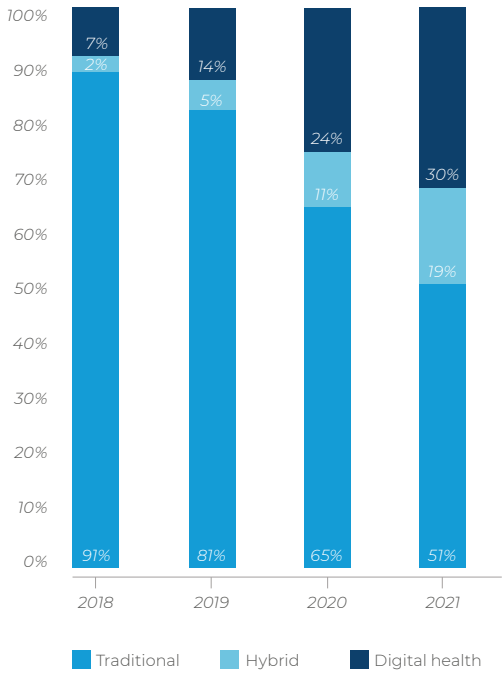
> Over the last few years we have seen the birth of a hybrid healthcare practice, which gives patients flexibility and optionality by providing both in-person and virtual services when it comes to accessing healthcare.

It is important to note that the prevalence of digital and hybrid insurance policy enquiries are even more significant against the backdrop of yearly double-digit growth of traditional healthcare enquiries.

We expect the hybrid practice to continue this upward trajectory as more traditional healthcare practitioners adopt digital methods, like virtual consultations and the use of AI to triage patients.

We have seen a phenomenal increase in hybrid healthcare practices year-on-year, now nearly 10 times over what it was in 2018

Enquiries split by traditional, hybrid and digital



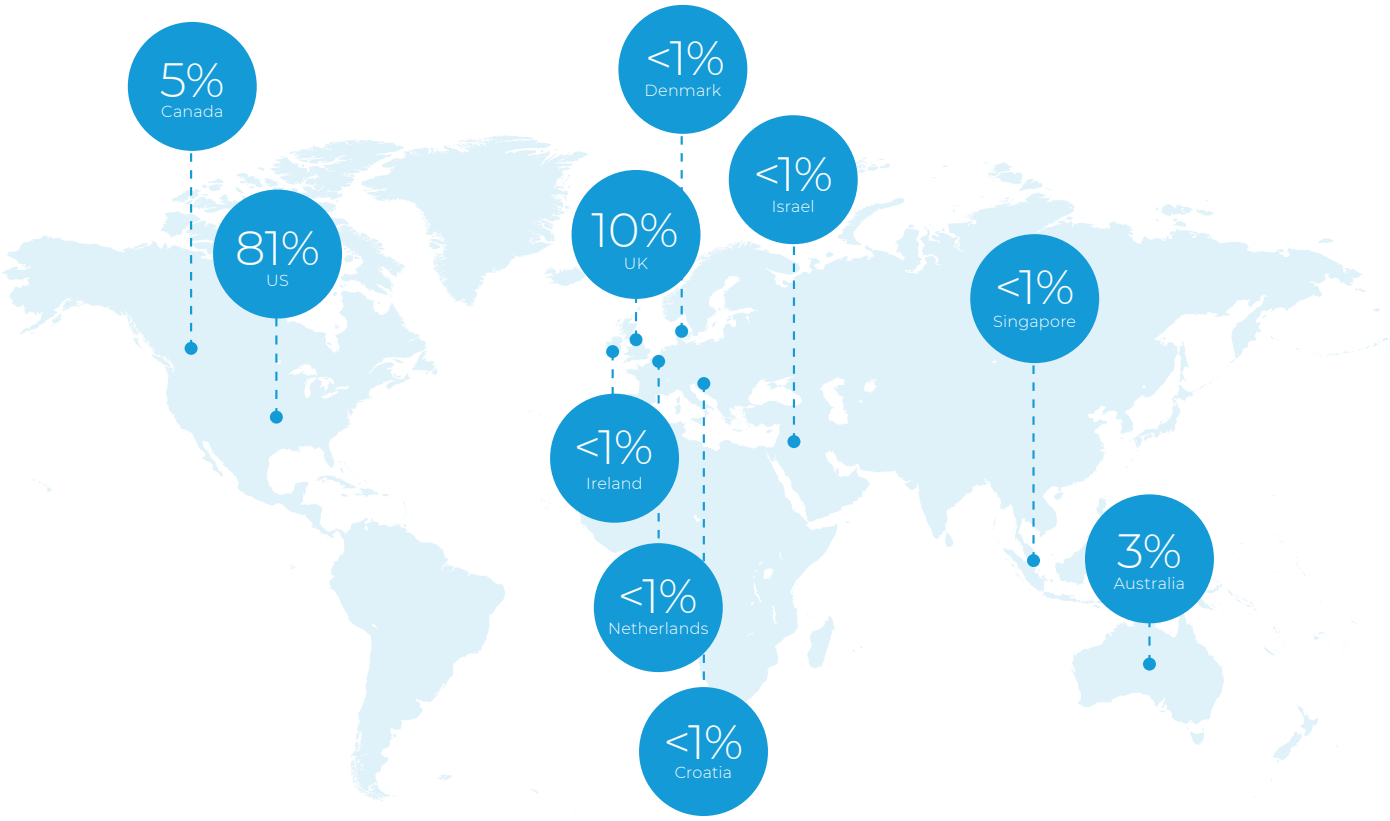
With advances in technology increasing access to care, we are seeing a rise in healthcare clients who have started to operate across virtual consults or online platforms. It is important for clients of this nature to think about their licensing requirements, especially when we are seeing entry within multi-jurisdictional presense. Many countries are still in their infancy when building regulations that providers must adhere to within this emerging space.

Rebecca Pelling
UK & International eHealth Product Manager

The US (81%) is still our dominant market, but the UK (10%), Canada (5%), Australia (3%) and ROW (1%) are growing quickly, accounting for a combined share of 18% of our digital healthcare enquiries in 2021.

In addition, we are now seeing enquiries from a wide selection of countries including Israel, Ireland, The Netherlands, Singapore, Denmark, and Croatia. These and other international markets look set to continue their growth and offer new opportunities in the years ahead.

CFC's digital and hybrid healthcare enquiries by geographic region 2021



Historical data

2018	US 100%				
2019	US 92%	UK 5%	Can 2%	Aus 1%	
2020	US 84%	UK 9%	Can 4%	Aus 2%	ROW 1%

The pandemic: A catalyst, but not the sole driver for growth

At a societal level, the impact of restrictions during the COVID-19 pandemic accelerated the drive towards digital, both from a corporate and a personal perspective.

But the impact of the pandemic has supported, rather than created the demand for digital healthcare solutions. Advancing technology had already created an explosion in the scope and scale of new approaches to healthcare.

AI was already powering an increasing number of healthcare processes, from helping to triage patients to assisting in diagnoses and chatbots.

Prior to the pandemic, augmented and virtual reality technology was being used to deliver healthcare support to people suffering from a range of conditions, such as post-traumatic stress disorder, depression, and attention deficit hyperactivity disorder.

Elsewhere, fitness and recovery apps had already become a part of our daily lives. In addition, remote patient monitoring (RPM) has been enabling healthcare providers and care homes to maintain contact with patients for longer, enact necessary intervention faster and reduce pressure on hospitals and clinics for years.

This is before considering the longstanding role played by telehealth and video conferencing solutions, and the underlying technology that hosts medical records, powers appointment booking systems and facilitates workflow management systems within healthcare organizations. The pandemic certainly facilitated the rise in telemedicine consultations, but the advancements in digital healthcare technologies were already apparent before the pandemic hit.

It is clear the pandemic is not responsible for today's prevalence of digital healthcare solutions, but there is little doubt it has driven adoption rates.

This accelerated uptake has been replicated in countries throughout the world, enhancing the level of demand for existing digital healthcare propositions and increasing the market opportunity for innovative and ambitious new entrants.

Data for fitness app downloads exemplifies this increased uptake. During 2019, health and fitness apps were downloaded 1.97 billion times. This may mistakenly be thought of as a peak, but in 2021 downloads hit 2.48 billion, despite the pandemic restrictions being lifted and consumers regaining access to gyms and fitness clubs (Source link).

At the outset of the pandemic, the UK's enhanced summary care record, which allows details of a patient's health to be shared among clinicians, was in place for 3 million people. It has now jumped to 57 million, driven by the demands of the pandemic (Source link).

In February 2020, fewer than 10% of UK GP surgeries could conduct video consultations – that figure is now 99% (Source link).

Digital healthcare sectors: AI has seen 32% growth in 2021

> **The biggest sector of CFC's digital healthcare portfolio is telemedicine – largely due to its reliance on well-established and widely accessible technology. It is interesting to note that while this market is ceding share to other sectors, it continues to grow, highlighting ongoing demand for such services.**

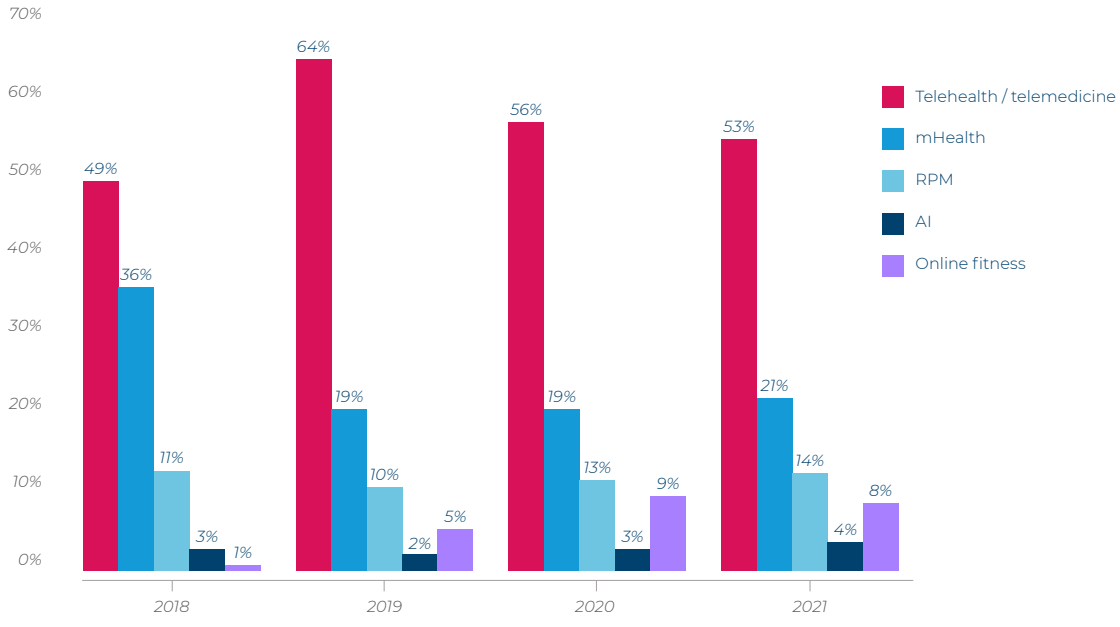
But there are other sectors expanding far more quickly and in 2020 / 2021 the mobile health sector was the biggest mover, increasing its share from 19% to 21% of our digital healthcare business. In part, this was driven by the popularity of health and wellbeing apps.

Another fast-growing sector is remote patient monitoring (RPM) solutions – which now represents 14% of our overall portfolio. Given the pressure on hospitals and the benefits of early intervention provided by remote monitoring, there is demand to expand the prevalence of these solutions.

Data interoperability (the ability of different systems / devices to communicate without effort from an end user) is a big area of growth. And not just in relation to RPM hardware and software, but perhaps more crucially the technologies enabling the seamless sharing of patient data across all parties associated in their care.

Whether driven by individual patient need, the pressure on existing healthcare infrastructures or the fact that they offer a better, more innovative solution, the application of digital healthcare will continue to expand into new areas while existing sectors such as telemedicine will remain strong for the foreseeable future.

Healthcare portfolio split by top five sectors 2018 - 2021



Industry sector definitions

Artificial intelligence (AI) is now being used to more effectively triage patient conditions, most commonly diagnosing basic illnesses via a chatbot function.

Augmented reality (AR) and virtual reality (VR) are being used within surgery, medical training, mental health, obtaining patient consent and enhancing patient engagement.

Mobile health (mHealth) is the practice of medicine supported by mobile phones, tablets and personal digital assistants.

Online fitness and lifestyle allows consumers to access fitness and lifestyle (dietary, calorie counting and exercise) support via websites or mobile apps.

Remote patient monitoring (RPM) enables the monitoring of patients outside of conventional clinical settings through the use of devices and accompanying software.

Software as a medical device (SaMD) is a software application that performs one or more medical functions and is not part of a physical medical device.

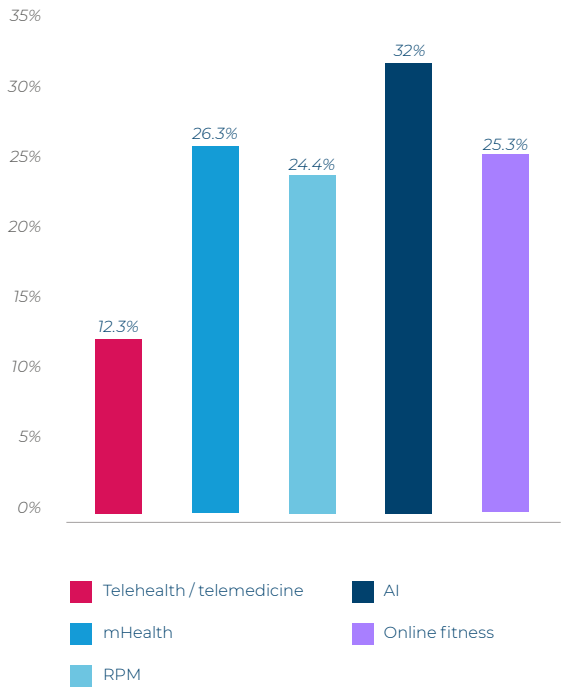
Telemedicine and telehealth use audio and visual consults to deliver care at a distance. A clinician in one location is able to provide care to a patient who may be located the other side of the country.

CFC's healthcare portfolio top five sector increases for 2020 – 2021

When evaluating sector growth independently for 2020 / 2021, AI comes out on top with an 32% increase in policy and enquiry count. We anticipate the AI trend to continue and ultimately make up a larger portion of our portfolio.

Although telemedicine is still growing at 12%, it has made way for other sectors - mHealth, online fitness and RPM have similar increases between 24-26%.

Healthcare practices and businesses often adopt more than one type of digital service, for example the use of telemedicine and RPM, or the use of AI within mHealth.



The advances in clinical AI software tools and widespread provider adoption often creates complexities in the regulatory and indemnity landscape.

Traditionally, a software as a medical device (SaMD) tool is commonly mistaken to need products and completed operations coverage (PCO), due to being classified as a technology product. The reality is, this 'technology product' needs coverage in the event there is an intangible technology failure leading to either a bodily injury or financial loss which is not typically picked up under PCO.

It is vital that these tools are not branded as a 'technology product' and are actually classified as a 'healthcare product and service', which their insurance policy should mirror.

Additionally, now with the increased regulatory scrutiny and complexities around both data handling and data efficacy, for those building AI tools into their software, coverage for such breaches are fundamental.

A key coverage for these healthcare products is healthcare professional liability, a coverage not typically found within a traditional technology policy forms a part of CFC's blended solution for traditional and hybrid practices, and digital healthcare companies.

> *Software companies providing clinical support, such as assisted diagnostics or workflow management tools, need an insurance package that doesn't stop at technology E&O and cyber. Policies should offer affirmative bodily injury exposures arising from; a medical negligence, technology failure or even a cyberattack, in addition to financial loss should the product fail to perform – all of which are covered under our bespoke policy. We ensure healthcare technology products are covered adequately for their unique contingent medical malpractice exposure.*

Ellie Saunders
CFC US & Canada Healthcare Team Leader

Claims: Nearly a fifth of digital healthcare claims are IP related

One of the longstanding problems for the digital healthcare sector has been the potential for the boundaries between healthcare professional, technology and cyber liabilities to become blurred if there are multiple policies in force.

Traditional healthcare providers adopting digital practices are often presented with new exposures they have not contended with previously. Bodily injury in this instance, does not just occur from healthcare services. It can also be the result of a technology failure or a cyber incident. In such situations, insureds need certainty that their insurance will support them in the face of a claim. They need to know a loss will not fall between the cracks, leaving them without cover.

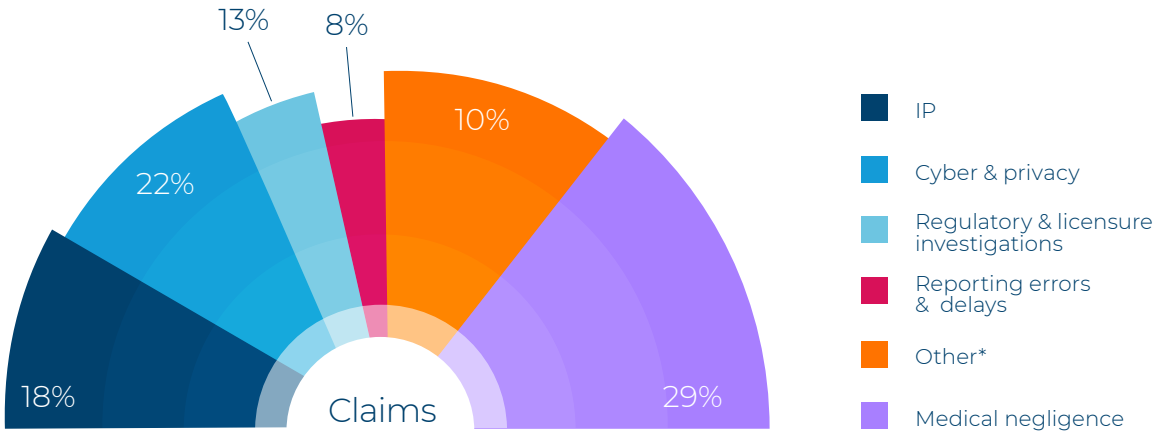
70% of our claims have come from areas which would not be covered under a traditional medical malpractice policy from 2018 - 2021

This logic has been at the heart of CFC's digital healthcare insurance proposition since it launched five years ago. A single policy, offering multiple, dovetailed covers avoids the issues that a patchwork approach can create. But what type of claims do insureds face?

Medical misdiagnosis remains the biggest single source of claims and accounts for around a quarter of those settled.

But the next two largest source of claims come in categories that could easily find themselves at the center of a disputed liability negotiation if different insurers / policies were involved. IP claims accounted for 18%, while those for cyber were 22%. Together they represent over a third of digital healthcare claims received.

CFC's healthcare claim split 2018 – 2021



*These claims are caused by activities like, but not limited to, technology failure, legal expenses and medical billings E&O.

Digital healthcare providers often have complex risk profiles due to factors such as the number of patients they serve, the multiple territories in which many operate, and the mix of proprietary and licensed technology they use. Identifying their exposures and mitigating them effectively will be key to their sustainability and success.

When delivering virtual healthcare services the complexities of the legal and regulatory landscape are widespread, leading to an increase in scrutiny on licensure and the standard of care delivered by providers. Ultimately this has resulted in a complex environment for providers and entities to navigate, causing an increase in licensure breaches and disciplinary complaints or allegations. It is imperative that providers, and the like, are covered for their defense of licensure costs when subject to such board action complaints, due to regulatory oversight when delivering services electronically.

Some claims are severe in nature and can run to significant amounts and entail substantial defense costs. In July this year the US Department of Justice brought criminal charges against 36 defendants in 13 federal districts for more than $1.2 billion in alleged fraudulent telemedicine, cardiovascular and cancer genetic testing, and durable medical equipment schemes (Source link).

> *Digital clinical services, as well as the supply of technology activities, may underpin allegations concerning patients' bodily injury or mental distress, or even death. While any notification is considered on its facts against policy terms and conditions, these examples show the value of a comprehensive policy that offers professional liability, bodily injury, technology errors and omissions, IP, and cyber coverages.*

Ines Shennan
CFC Healthcare Claims – Team Leader

Traditional bodily injury coverage triggers are outdated

The importance of bodily injury cover

Healthcare providers face new exposures as technology advancements continue to play a more crucial role in how healthcare is delivered.

Failure to adequately assess a patient's symptoms via telemedicine could lead to incorrect diagnosis and delayed treatments, AI could incorrectly triage or diagnose a patient, or a failed system update could impact RPM functions. Bodily injury exposures are wide spread across the digital healthcare industry.

Claims example: Bodily injury

A skincare app specializing in the review of unusual moles, uses AI to assess if skin lesions are cancerous via images taken with a smartphone camera, before referring to an in-person appointment. On one occasion, the app determined the patient's lesion not to be a risk, so the patient did not attend a dermatology appointment. However, the AI was focusing on the wrong part of the skin, leading to an incorrect diagnosis. This failure in the AI technology led to the patient's skin cancer going undiagnosed for a 6-month period, increasing the bodily injury risk.

AI-related IP claims are outpacing traditional incidents

Protecting IP assets

IP is one of the most critical assets for every business across every industry, and it is becoming more apparent within the healthcare industry as companies create unique digital processes and systems for patient care. Insurance needs to extend to breaches of IP, allowing digital healthcare companies to invest and innovate.

Claims example: IP and misappropriation of trade secrets

An individual had worked at a telemedicine entity for several years and decided to leave and start a new company, providing similar services to their previous employer. Allegedly, the employee was accused of violation of trade secrets by taking information with them when forming their own company. Further allegations include breach of fiduciary duty and breach of contract.

Bodily injury often arises from cyber events

The severity of cyberattacks on healthcare providers are often far more catastrophic than a typical business. Cyberattacks corrupting healthcare systems and causing downtime can impact patient medical files, dosage control and cause bodily injury or death.

A comprehensive policy should provide coverage for bodily injury arising from cyber events and system outages.

CFC's eHealth policy offers policyholders access to CFC's award-winning app, Response. The app proactively identifies cyber threats and compromises for policyholders, mitigating any substantial cyber risks before they become a claim.

Claims example: Cyber

A malicious email was sent to a telemedicine company, when clicking the link the company accidently allows an attacker into the computer systems, causing system business interruption, encrypting all records and halting the ability to operate. Not only does the company have a duty to protect their patients' personal records due to data privacy acts, the insured could also face huge financial penalties, either from fines for not cooperating or paying to retrieve their data from ransomware threat actors.

In 2021, our frequency of healthcare cyber claims was 4x larger than it was in 2020

Digital healthcare trend predictions: The hybrid model

With high adoption rates and extensive funding continuing, there is no sign that the digital healthcare industry will slow down. Over the last few years alone, it has proven to have had the most rapid evolution yet. As a result, CFC have assessed industry trends and enquiry demands and made the following predictions.

Technology evolution:

- Digital healthcare tools will be increasingly used to predict medical conditions or diseases before they even occur. Technology supporting pre-operative procedures is already in place, but it will be more commonplace for whole medical teams to have 'practice runs' before a surgery. AI will increasingly be used for diagnostic purposes to plug the provider shortage gap.
- From GPs and surgeons, to dermatologists and radiologists, the use of AI is becoming more prominent in every healthcare setting. With these constant developments and eagerness to adopt, the liability lines between practitioners and AI tools will become increasingly blurred.

Cyber risks:

- The increased use in technology opens the healthcare industry up to even more cyber exposures. Patient bodily injuries are more likely to occur due to ransomware attacks and technology errors, especially as healthcare systems become more reliant on digital healthcare solutions to deliver care. One-dimensional bodily injury triggers on policies will become problematic.
- Digital healthcare companies will become an even larger target for hackers. Holding patient data to ransom or shutting down healthcare software programs are common outcomes after cyberattacks, especially as these digital systems become integral to the delivery of universal healthcare.

Regulations and investigations:

- Telehealth operators prescribing controlled substances will come under greater scrutiny by governments and regulatory bodies. Providers will have to maintain specific licenses and adhere to more frequent regulation updates, especially those operating across different jurisdictions.
- There will be an increase in medical board investigations and a clamp down on regulations across territories to ensure healthcare providers are operating correctly. Temporary orders put in place during the pandemic (to deal with the increase in telemedicine adoption) will soon expire, making way for permanent procedures.

The future of healthcare will see digital healthcare tools become more mainstream and a hybrid model (healthcare practices using digital and traditional methods) will be the future.

What the future holds: Every healthcare provider has a digital health function

As the healthcare and technology industries continue to intersect and evolve, so too will the exposure digital healthcare providers face. The day when surgery is carried out by AI and without any human intervention is getting closer. But how would that impact the potential scale of liabilities?

The US continues to lead the digital healthcare sector and we expect to see further sustained growth in the coming months and years. But the UK and Canada have quickly become significant markets for us, jumping from 7% of our digital healthcare business to 15% (2019 – 2021).

We are seeing a huge surge in demand and adoption of digital healthcare services in Australia, with many new operators entering the market and our existing clients looking to expand across the globe as they grow. This is being aided by government healthcare reform, aiming to ensure sustainability of the healthcare system through aspects such as electronic prescribing and better access initiatives.

The potential that these healthcare developments bring are endless, but the need for understanding the risks and exposures is more apparent than ever. The future of healthcare is full of exploration, and there is ample opportunity for businesses and patients alike.

The fast developments and adoption of AI, VR and AR, especially in areas like surgery, have already seen ground-breaking results, but the risk and exposures are often left uncovered. Even general practitioners, operating largely at a traditional level, still have digital exposures and most are unaware of the consequences. The education of the industry and those that work across it is paramount to the continued success and growth.

> *Healthcare has never been such an exciting space to be a part of – the rapid adoption of innovative technology solutions has transformed practices to improve the quality and accessibility of healthcare. AI is more commonly being used to predict medical conditions or diseases before they even occur, and for diagnostic purposes to plug the provider shortage gap. The new and improved Healthcare 2.0 is increasingly looking like a hybrid model, taking the best from both traditional and digital healthcare providers.*

Tim Boyce
Head of Professions and Healthcare

For any questions, please email healthcare@cfcunderwriting.com