The rise of Digital Doctors

The changing face of UK health tech provision

onefourzero

GK

Contents

Foreword

Robin Grainger, Group CEO, GK and onefourzero

“Demand for online GP services, mental health and medication management apps has exploded in the UK, as patients seek out new technologies to deliver greater convenience and control of care.

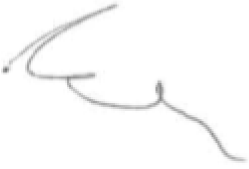
Innovative solutions are undoubtedly needed to address the challenges facing the NHS as a result of an ageing population and public sector funding squeeze. New health tech providers are unlocking the power of smartphone technology to deliver services directly to patients, reducing the need for expensive equipment or time spent in hospitals.

It’s clear from our data that the demand from patients exists for alternative models of service delivery. But can these new technologies deliver effective care?

Regulators and health professionals have already expressed concerns regarding the safety and legitimacy of patient-centred health tech. Effective collaboration between health-tech providers, NHS trusts, policymakers and regulators is essential to ensure we take full advantage of these new technologies, whilst protecting patients.

In this market, providers who take a proactive approach to issues regarding regulation, patient safety and patient data will stand out from the crowd.”

Robin Grainger



Key Findings

New research by GK and onefourzero has found that demand from patients for health technology has risen dramatically since 2014. At a time of significant pressure on NHS services, we have found that patients are turning to technology to help them address every-day health issues. We looked at three key markets:

1. Online GP & prescription services
2. Mental health technology
3. Medication management

Our research found:

The number of patients searching for online GP and prescription services has almost doubled since 2014, increasing by 99%

In the last four years, searches for apps relating to mental health have increased more than five-fold, by 566%

As demand has increased for online GP services, so has positive sentiment of online social media conversations. In 2017, 20% of posts mentioning online GP services were positive on average, up from just 4% in 2016.

Demand for technology which aids patients to administer their own medication has seen a dramatic rise of 597% since April 2014.

Desire for convenience is the single biggest driver of demand for online GP services, and is mentioned in 24% of online conversations on the topic.

Our findings highlight the need for health tech providers to demonstrate excellent transparency, legitimacy and compliance to build trust amongst patients and mitigate risk in a fast evolving regulatory and policy environment.

Introduction: Health Tech, a changing market

Since 2014, the UK's health tech market has grown by almost 50%, from £2 billion to £2.9 billion in 2018. Patient centred health tech is currently used to treat a range of conditions, with significant innovations being made in the fields of prevention and public health, managing long-term conditions and online GP and consultation services. According to latest NHS England figures, one in four patients are now using online GP services.

Health tech operates in a mixed market, with services delivered by both the NHS and private providers, or a combination of the two. All patients registered with an NHS GP can sign up to use a limited range of online GP services, such as ordering repeat prescriptions, viewing medical records and booking appointments. Online consultation service GP at Hand is a free NHS service, which replaces patients' previous registered GP and is operated by Babylon, an artificial intelligent (AI) health tech start-up.

Around 35 private providers are also in operation, which offer GP appointments for a fee of £20-30, such as Pushdoctor and Pharmacy2U.

Clinical evidence has found that online Cognitive Behaviour Therapies can be as effective as face-to-face, and are recommended in the UK for depression and anxiety by the National Institute for Clinical Excellence (NICE). A large number of CBT and Acceptance Commitment Therapy (ACT) applications are now widely available to patients suffering mental health conditions such as depression, anxiety or bipolar disorder. For mental health patients, the NHS offers an app library with specific filters for mental health apps featuring tested and approved technologies, developed though trusts or externally. A wide variety of services are available from private providers, and offer a combination of free and paid for services. A wide range of apps are available on the market designed to help patients administer medication, through reminders, tracking conditions or delivering repeat prescriptions.

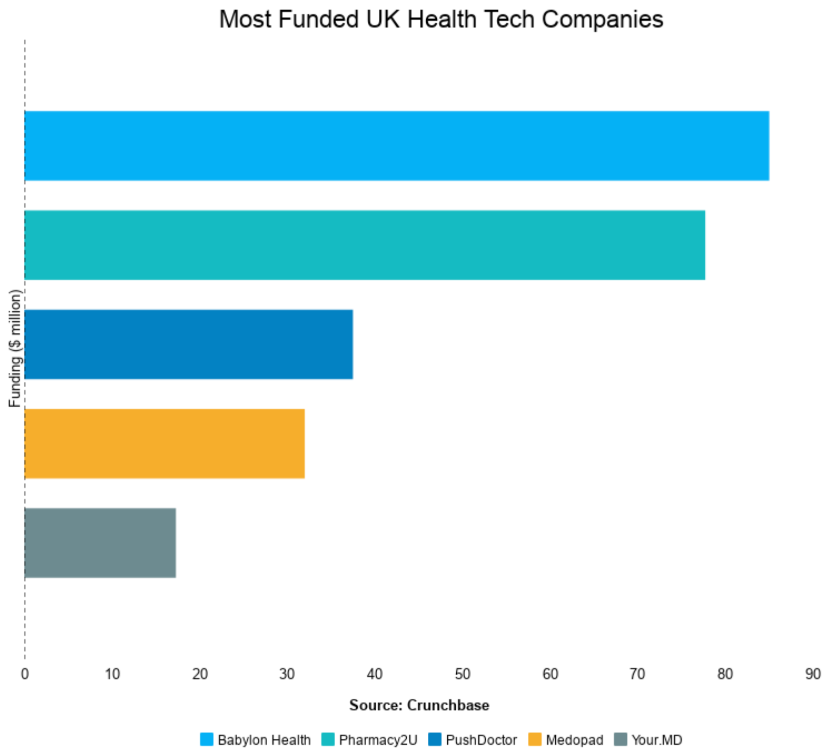


Figure 1.Source: Crunchbase

In Britain a broad policy consensus exists that urgent action is needed to address the funding challenges within the NHS - which faces a £30 billion funding gap by 2020-21. Policymakers are increasingly recognising health tech as a solution to this gap, and allocating funding accordingly. In July 2017, the Department for Business, Energy and Industrial Strategy and the Department of Health announced a £68 million joint fund for investment in innovative healthcare technology. Similarly, in January 2017, Theresa May announced £67 million of funding to "expand digital mental health services."

However, despite a favourable funding and policy environment, barriers remain for new technologies entering the NHS. The influential Watcher Review concluded in 2016 that secondary care was lagging behind primary care, and that an integrated approach was needed to ensure the NHS took full advantage of the benefits of digitisation. Similarly, the 2016 Accelerated Access Review concluded that the NHS "currently struggles to prioritise even the best new products" and that a shakeup of how new technologies are adopted was needed.

Methodology

GK and onefourzero used online demand data, as well as analysis of over 34,000 posts on social media, review sites and forums, to understand demand for different forms of health tech. In the modern world, demand data derived from Google search volumes matters more than ever. Given that up to 72% of patients research common medical conditions and treatments available online, Google search data is a reliable proxy for demand for new services, and can indicate changes in patient preferences and behaviour.

Why does demand data matter?

- 81% of shoppers research products online before buying
- 350,000 tweets are sent every minute
- 72% of patients research common medical conditions and treatments available online

We examined demand for health tech in areas the NHS has identified as a priority for improvement: GP services and self-supported care, including mental health. Mental health is listed in the Five Year Forward View as one of the NHS's six clinical priorities for transformation. Improving patient outcomes and quality of care is also set out in the Five Year Forward View for mental health. The Five Year Forward View also sets out a "New Deal" for GP services, committing to further investment. "Empowering patients" to manage their own health and care is listed in the plan as a priority and spans several areas of care.

To drill down into why demand for these services is increasing, we used our suite of social listening tools to analyse online conversations relating to these services, covering over 34,000 posts on forums, blogs and social media sites. We then looked at the latest GP patient survey data, as well as available data on patient satisfaction and waiting times, to establish factors potentially driving demand for new technologies in these areas.

Market Analysis: Online GP & Prescription services

New data analysed by onefourzero reveals that the number of patients searching for online GP and prescription services in the UK has been growing rapidly year-on-year. Since 2014, Google searches have almost doubled, increasing by 99%. In the last 12 months alone, the number of people searching for online GP and prescription services has increased by 36% compared with the same period the previous year.

Data from NHS England's 2017 GP Patient survey indicates that patient satisfaction declined since 2016 across several key metrics, including GP surgery opening hours, waiting times, and ease in contacting their GP and securing an appointment. The Public Accounts Committee's Access to General Practice Inquiry of April 2017 found that 46% of surgeries were closed at some point during 'core opening hours,' causing the committee to conclude that they had 'concerns' over access to GPs. This lack of access to traditional GP services is a key driver of demand for online services.

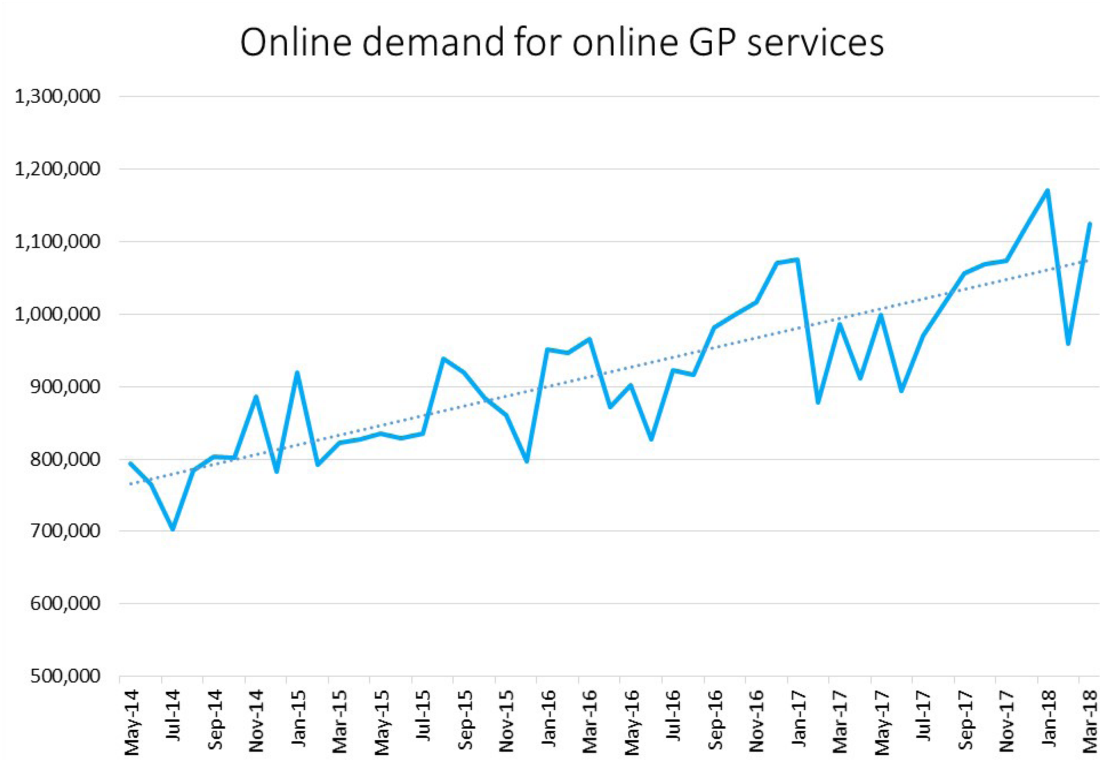


Figure 2. Source: Google AdWords

Our sentiment analysis of over 24,000 social media posts relating to online GP services supports this theory, suggesting that convenience is driving demand for these services. Of the conversations online relating to online GP and consultation services, one in four (24%) of all conversations mentioned "next-day, "fast "or overnight."

Our analysis also reveals that as demand for these services has increased, so has positive sentiment, as shown in figure 3. In the last 12 months, 20% of posts were positive on average, up from just 4% in the same period the previous year.

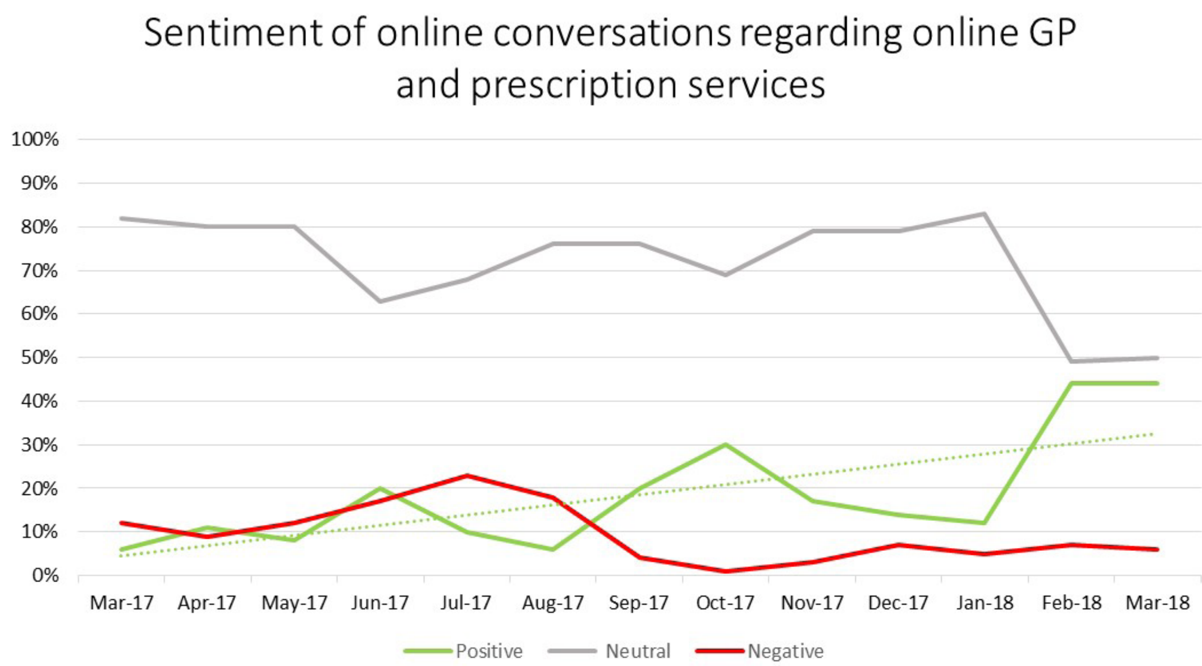


Figure 3. Source: Crimson Hexagon analysis of 24,000 social posts March 2017-2018

Market Analysis: Mental health technology

Demand for technology which helps patients manage long-term conditions at home is growing exponentially.

Mental health technology and medication reminder apps saw rapid increases that were not replicated across all forms of self-supported care services. Demand for apps for cancer patients, for example, remained steady.

Our data reveals a huge increase in demand for apps that help manage mental health conditions, as shown in figure 4. In the last four years, searches for apps relating to mental health have increased more than five-fold, by 566%. The last 12 months saw 46% more searches than the same period the previous year. While demand has risen hugely, actual search volumes are still low, at just 10% of the total for online GPs, indicating that mental health is a much smaller market.

NHS mental health services are facing significant funding challenges, with as many as 85% of CCGs missing NHS England's mental health investment standard (MHIS). As a result, patients experience long waiting times, with one in 10 patients waiting over a year before receiving any form of treatment, and one in two waiting over three months.

At the same time, mental health awareness is at an all-time high thanks to campaigns from figures such as Prince Harry, as well as political developments such as Labour appointing the first Cabinet level ministerial position for Mental Health, and Theresa May highlighting the topic as a "personal priority." With this in mind, it is perhaps no surprise that patients are increasingly turning to technology to provide care.

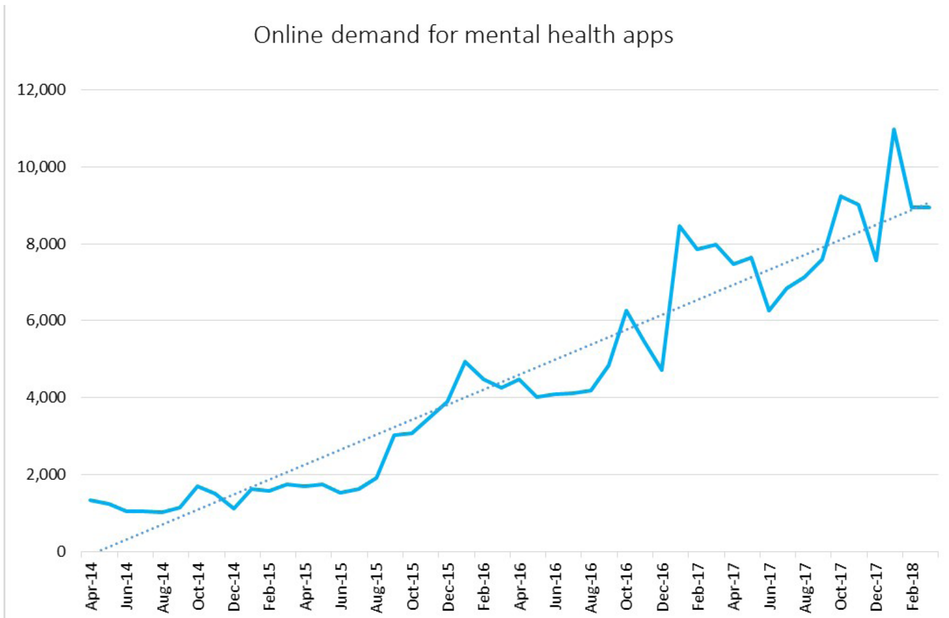


Figure 4. Source: Google AdWords

However, when examining the sentiment of online conversations relating to mental health apps, the picture is less clear. While positive sentiment has increased from just 10% in March 2017 to 44% in March 2018, we can also see in figure 5 a rise in negative sentiment, which has risen from just 2% in March 2017 to 22% a year later. These figures suggest patients are increasingly polarised about the efficacy of mental health technology. For providers in this space, this data presents a twofold challenge – not only is the market considerably smaller than the broader health tech space, but the potential for reputational risk driven by poor customer experience is also increased.

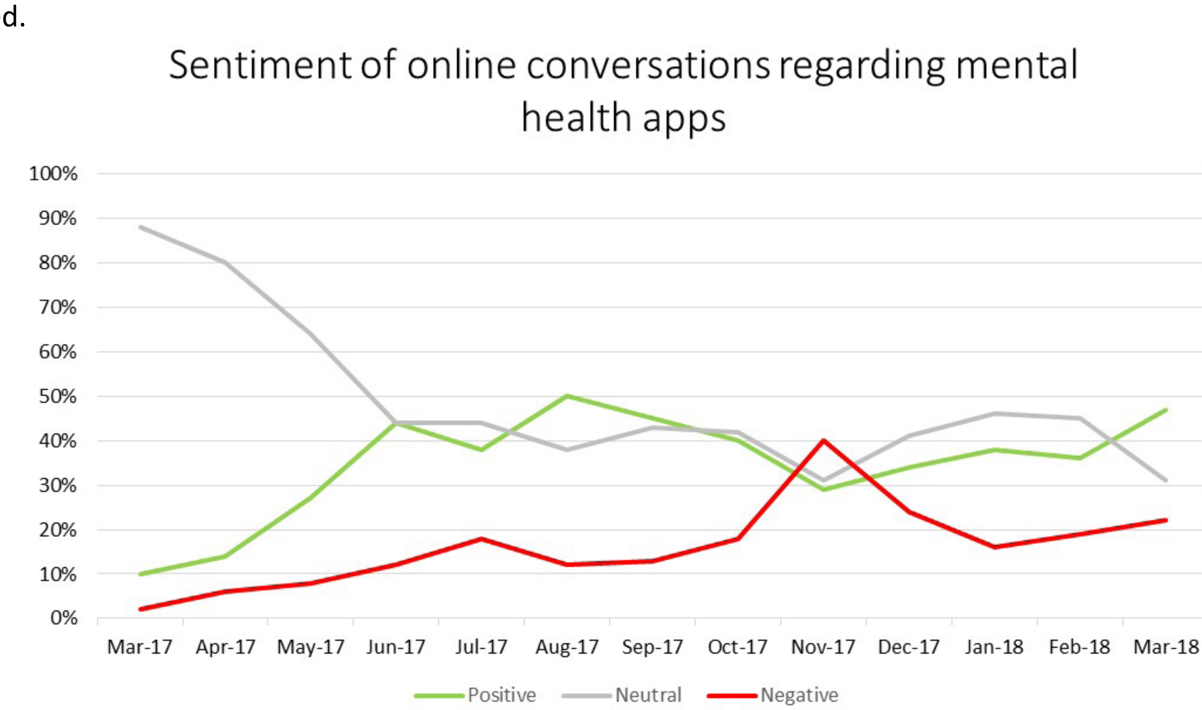


Figure 5. Source: Crimson Hexagon analysis of 10,000 social posts from March 2017 - March 2018

Market Analysis: Medical Management

Demand for technology which helps patients to manage their own medication has risen by 597% since April 2014. Significantly for anyone operating in the market, this rapid growth also shows that the rise in demand for health tech is not limited to the young.

While online GP services are predominantly used by patients aged between 20-39, medication reminder apps are designed with people with long-term conditions in mind, who may suffer from forms of memory problems - disproportionately those aged 60 or over. As we highlighted in a recent blog, the idea that older generations are unfamiliar with technology is no longer true; smartphone use in the over-50s is increasing fast, with adoption amongst 55-75s reaching 71%.

Our data supports this, and highlights that older patients are just as likely as their younger counterparts to search for technological solutions to help manage their care.

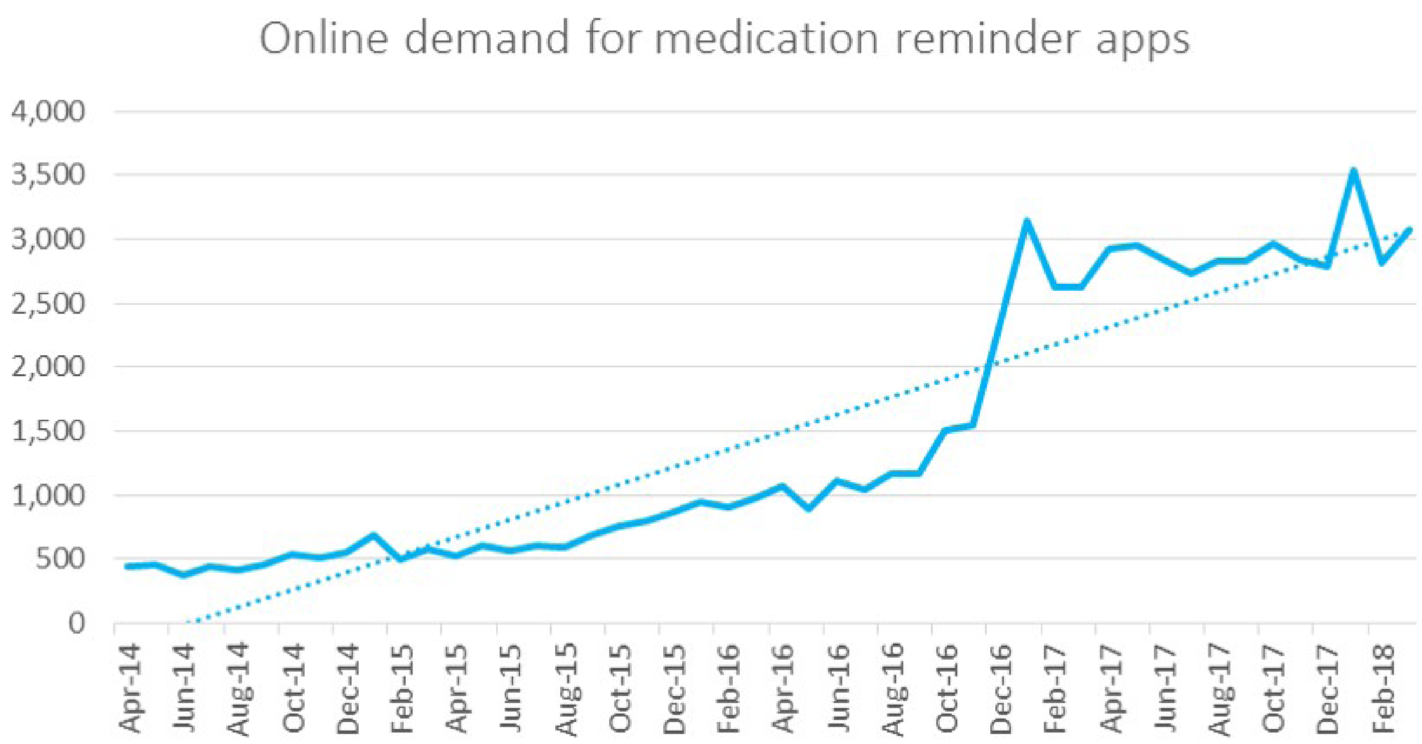


Figure 6. Source: Google AdWords

Fleur Hicks, Managing Director of Digital Insights Firm onefourzero, says

"It's clear from our data that patients' appetite for health technology is increasing, with more and more patients turning to online providers for consultations, prescriptions, and help managing long-term conditions.With this demand showing no signs of slowing down, the question for providers operating in this space is how they can ensure they offer the best possible service for patients without compromising on patient safety and best practice.
In a sector as sensitive as health tech, gaining and sustaining trust amongst users is vital for building brand value. For companies that successfully do so, the market evidently exists."

Transforming service delivery

The potential for these technologies to improve care and deliver much needed efficiencies in the NHS is significant. Our data shows that an increasing number of patients are using online GP services and are satisfied with the service provided. This could result in a greater availability of in-person appointments for those in need. This behavioural change could also reduce missed appointments, which NHS Digital estimates costs the NHS £1billion a year, and instances of patients presenting at A&E as a result of not being able to see a GP.

NHS practices which offer online services have already seen large uptake and a reduction of pressure on traditional appointments. Swan Practice in Buckingham saw 1,200 of its patients sign up for an online account and halved the average number of calls it received each day from 50 to 25.

Greater use of new online GP and consultation services could reduce this burden further. The perceived ease and accessibility of online services could also prompt patients to engage with a GP earlier, enabling health professionals to spot illnesses earlier, thereby reducing costs as well as preventable illnesses or deaths.

Rebecca Lury, Managing Director and Head of Health, GK Strategy, says

“The NHS is facing increased pressures on funding and resources. The explosion in the market for innovative solutions to tackle simple health concerns is welcome. This is clearly a focus of the UK Government, with commitments made around expanding future digital services, but companies will need to consider how best to operate in this new market.Companies looking to break into, or grow their position, in this market, should engage with government early to build their reputation, and demonstrate their benefit to the healthcare system, as well as the wider UK economy. This will help to mitigate the growing concerns about operators’ practices in the market, setting responsible companies up as the foundations for a strong innovative healthcare market in the future.”

Rise of the Apps

Likewise, mental health apps have the potential to improve quality of outcomes within existing budgets. Research by mental health charity MIND has found that only 13-50% of patients currently have a choice regarding the location and frequency of their therapy sessions, which is detrimental to patient engagement. Patient engagement is essential for positive outcomes of mental health treatments, and by virtue of their ease of use, these technologies have the potential to widen the pool of patients who are able and willing to access support.

Our data indicates that demand for health tech is growing rapidly amongst the over 60s as well as amongst those aged 21-35, which could have transformative effects for NHS provision of social care. A wider uptake of medication reminder apps could lead to significant savings through reducing wasted medicines, which the Department for Health and Social Care (DHSC) estimates costs the NHS £300 million every year. More significantly, correctly administering their own medication will enable patients with chronic conditions to stay at home for longer, reducing time spent in hospital or in residential care.

In March 2018, Jeremy Hunt outlined the seven principles of the Department's upcoming Social Care Green Paper, which include "quality and safety embedded in service provision, whole-person, integrated care, highest possible control given to patients," and a "diverse, vibrant and stable market."

Principles of the Department for Health & Social Care's upcoming Social Care Green Paper
Quality
Whole - person integrated care
Control
Workforce
Supporting families and carers
A sustainable funding model supported by a diverse, vibrant and stable market
Security for all

With an estimated 1 million people in the UK currently receiving care at home, and two-fifths of the NHS budget being spent on over 65s, the growth of health-tech in this area could play a key role in reducing the financial burden of an ageing population allowing a new generation of smartphone-savvy older people greater access and control over their care. It remains to be seen whether tech will be given the attention it deserves in the Green Paper.

A Growing Backlash?

However, it is not all plain sailing. The rise of online GP services has caught the attention of GPs, trusts, regulators and the Care Quality Commission (CQC), with concerns raised over patient safety, legitimacy and transparency.

In January 2018, the CQC was granted new powers to inspect, rate and review private providers, a move indicative of greater regulatory interest in the health tech sector. In February 2018, the CQC investigated 35 independent online GP providers, including Babylon who run GP at Hand, and found that 43% "were not providing 'safe' care according to the relevant regulations." Concerns included inappropriate prescribing of antibiotics without talking to patients' registered GPs, unsatisfactory safeguarding, and a lack of information collecting and sharing. The CQC has released guidelines for patients using online GP services, urging them to check that the service is registered with the CQC, that the acting doctor is on the General Medical Council register, and that they are clear about how their information is used and stored.

CQC Concerns with Online GP services
Inappropriate prescribing of antibiotics and prescribing high volumes of opioid-based medicines without talking to the patient's registered GP
Unsatisfactory approaches to safeguarding children and those who may not have the mental capacity to understand or consent to a consultation
Not collecting patient information or sharing information with a patient's NHS GP

The CQC is not the only body to express concerns. After receiving complaints, the Advertising Standards Authority (ASA) investigated private online consultation service Push Doctor, and found its claims to provide consultations with NHS doctors to be "misleading." GP at Hand, which is registered in North-West London but allows patients across London to register for its online services, has also come under fire. Commissioners in South London complained after patients left GP surgeries for GP at Hand, unaware that the service replaced their existing GP and that they would have to re-register.

Online GP providers in the press:

"GPs lead protest against controversial GP at Hand service" **GP online, 28 Mar 2018**

"GP at Hand is destabilising general practice" **Pulse, 21 Mar 2018**

"London doctors protest over NHS smartphone 'video appointment' service" **Evening Standard, 29 Mar 2018**

In March 2018, GPs led a protest calling for the service to be banned entirely on the grounds of patient safety and that the service was affecting the finances of other practices. Online providers must ensure they build and maintain positive relationships with traditional practices, as their influence over regulators and media can damage a brand and consumer confidence.

Mental health technology has so far attracted limited regulatory and policy scrutiny, and the NHS's development of an accredited library of mental health apps is evidence of a positive endorsement of the sector. However, critics have noted that, with no formal system of accreditation in the UK, the quality, safety and efficacy of these apps is extremely variable. The British Medical Journal warned that apps which fail to "demonstrate evidence underlying the methodological approach taken, or evidence of effectiveness" have the potential to do more harm than good if replacing traditional therapy. Widespread use of these apps could have dangerous consequences for patient safety if unchecked, especially considering the vulnerability of patients seeking mental health support. Providers must therefore play an active role in shaping the regulatory landscape.

Regulation in this space is fast evolving, as the technologies themselves present new regulatory and ethical challenges. Health technology providers therefore face the challenge of operating in an unclear environment subject to change, often reactive and influenced by public and practitioner sentiment.

No app or technology-specific guidelines currently exist, and guidelines regarding sufficient clinical evidence vary dramatically across the NHS.

As app-based health tech providers rely on processing highly sensitive patient data, compliance when handling this data is absolutely essential to avoid regulatory action and losing patient trust.

Recent controversies over the NHS test app DeepMind breaking UK privacy law, the Facebook and Cambridge Analytica scandal and the recent General Data Protection Regulations (GDPR) have increased public and regulatory scrutiny over data handling.

Recommendations for Providers:
Develop a sound evidence base to build trust with customers and medical professionals
Maintain strong relationships with traditional providers to improve the quality of service delivered, avoid negative press coverage and reputational damage
Practice excellent data handling, as any breaches could damage your ability to operate
Take the lead when it comes to regulation, rather than waiting for external bodies to act

Though no formal best practice advice exists, providers can take simple steps to avoid finding themselves on the sharp edge of regulatory or policy action. Patient-centred health tech providers should ensure that accredited practitioners are involved with the development or delivery of the service offered and that it has undergone extensive trials and has a strong peer-reviewed evidence base. Companies should ensure all patient data is held in strict accordance with the latest data protection regulations, and should be prepared to demonstrate this. When possible, companies should ensure they are registered with, and approved by, the relevant regulatory body.

However, in such a sensitive and fast-changing regulatory sector, companies must go beyond compliance to align themselves with emerging best practice and the expectations of their customers in order to stand out from the crowd.

Jamie Cater, Research Manager, GK Strategy, says,

"As overall demand for health and care services rises, policy-makers are exploring every possible route to ensure that increasingly complex needs among an ageing population are met as efficiently and effectively as possible. Still in an era of relative budgetary constraint, both primary and secondary care providers are reliant on innovative solutions to cope with the pressures they face. The pursuit of new models of care in the NHS is enabling them to investigate where new technologies can improve service delivery.

As the development of the health tech market in the UK gathers pace, the policy and regulatory framework is also rapidly evolving. Providers need to be fleet of foot in responding to change and engaging with decision-makers in the Government, the NHS and the CQC. Whether considering the impact of GDPR, understanding different approaches to procurement across hospital trusts and CCGs, weighing up the evolving regulation of services such as online GPs, or navigating Sustainability and Transformation Partnerships, the regulatory landscape for providers is shifting in a sector that has historically tended to be risk-averse.

Nevertheless, the opportunities for agile businesses are clear. The increasing emphasis on prevention, the need for more efficiency, and the agreement between all major stakeholders, that new technologies are essential for the future sustainability of the health service, mean that there will be a major role for health tech in meeting the challenges of growing demand. The ability of providers to offer innovative and practical solutions to the desire for more integrated and personalised care will place them at the forefront of policy-makers' thinking. While there may be some institutional and regulatory barriers to negotiate, nimble and engaged businesses will find a positive environment in the UK health sector."

Conclusion

With demand for GPs, mental health and social care services rapidly increasing, patients are increasingly looking towards technology to provide solutions. Our data reveals a significant change in patient behaviour, which presents an exciting opportunity for developers and investors in this space.

While these services are not necessarily suitable for all patients, new technologies have the potential to address pressing problems facing the NHS and support traditional models of delivery, whilst providing better care. Importantly, demand from patients shows no sign of slowing down.

Rather than imposing punitive or restrictive measures, regulators must strike a balance between encouraging innovation and ensuring patient safety. Health-tech services must be integrated into wider provision of care, and effective partnerships between trusts, public health bodies, private providers and regulators are crucial in ensuring that a high quality service is maintained.

Health-tech providers must also strike a delicate balance between promoting the disruptive power of their services to investors and potential partners, and being sensitive to the concerns of traditional providers and their employees whose livelihoods and operating models may be undermined.

The ‘ask forgiveness, don’t seek permission’ approach that has characterised some disruptive tech businesses, such as Uber, is no longer as palatable as it once was for politicians or investors, and must be approached with even more caution when operating in the health market, where lives can literally be on the line.

Disruptors must also not underestimate the established relationships of existing providers. Politicians, regulators, the public and other stakeholders – especially NHS providers or community-based healthcare organisations – are better organised than, for example, taxi companies or hotel groups. There are powerful trade associations with strong media links, and millions of unionised public sector workers who could be affected. They will be quick to use their influence to inhibit or prevent disruptors who appear to threaten them.

This is why it is essential that health tech providers give proper consideration not just to their consumer offer but also their offer to the wider healthcare community, in terms of making a positive and lasting contribution to better healthcare for all. They need to be seen as responsible and collaborative participants in the healthcare sector, rather than as innovative disruptors.

Providers who take a proactive approach to issues regarding regulation, patient safety and patient data will stand out from this crowded field and have an opportunity to shape the future of the sector.

For those that succeed the rewards could be enormous.

About the Authors

Rebecca Lury - Managing Director, Strategic Communications

Rebecca has 9 years of experience working across policy, public affairs and communications. At GK, Rebecca is responsible for providing strategic support and advice, helping clients to achieve their business objectives through public affairs and communications. Rebecca is also a local Councillor in Southwark, where she is the Chair of the Healthy Communities Scrutiny Committee, and she is also Chair of the South East London Health Scrutiny Committee

Fleur Hicks - Managing Director, onefourzero

Fleur is a strategic Marketing and Operations professional with over 16 years' experience managing blue chip digital and broadcast brands with 7 figure commercial success in the B2C and B2B2C sectors. With key experience across web, mobile, TV and print, Fleur has delivered industry-leading marketing and operations analysis strategy at board level in consultative and client side roles. Fleur joined the company in autumn 2015 and has overseen its growth from a two man consultancy to world leading Digital Diligence Agency. Fleur is also an elected fellow of the RSA and sits on IDM, IAB and WOMMA councils.

Jamie Cater - Senior Policy Analyst

Jamie works on political due diligence, political risk analysis and opportunities profiling. He specialises in qualitative research on a range of public policy issues, including health and social care, financial services, energy, employment and education. Prior to joining GK's research team in 2014, Jamie worked in the offices of a former Shadow Education Minister and Shadow Transport Minister.

Caitlin Wilkinson - Account Executive

Caitlin joined GK's marketing team in November 2017. Prior to joining GK, Caitlin worked in the corporate fundraising team at youth homelessness charity Centrepoint, and has previously worked in marketing in the not-for-profit sector. Caitlin graduated from the University of Bristol with a degree in History.

About GK

GK Strategy is a next generation strategic communications agency.

We support investment decisions, build reputations, deliver impactful campaigns, shape markets and help clients navigate regulatory landscapes.

Public affairs, communications, marketing, brand, reputation, risk, market research and digital are no longer separate disciplines but interconnected and interdependent. The world has changed, yet many organisations still rely on methodologies that haven't changed for over a century.

GK Strategy thinks differently. Employing cutting-edge digital technologies, combined with experienced communications and risk management, we are driving change and creating value for investors, brands, member associations and charities.

We believe in research-led strategy and identify and analyse evidence and data to underpin our communications strategies and to improve them over time. To this end, we established our own digital agency, onefourzero, three years ago, recognising the power that digital data analytics can yield to underpin our client work.

As an independent agency, we are not bound to corporate targets, or quarter by quarter reporting, but put our clients' interests first and are passionate about delivering tangible results. We have the freedom to think long term and outside the box, and we relish the opportunities to do so.

To find out more or speak to the team, please contact info@gkstrategy.com

About onefourzero

onefourzero is digital analytics firm providing data-driven reports for investors and brands to help drive commercial growth, marketing investment, digital strategy, operations and international expansion.

Our services combine big data with our multi-disciplinary team of analysts who produce concise, straightforward reports that are derived from high volumes of complex data.

We provide sector, geographic and brand level real-time performance data drawn from Amazon, Google, Facebook, Twitter and many more sources, enabling our clients to understand market dynamics, market share, competitive benchmarking and potential growth across consumer industries.

Always at the forefront of technology and data, we understand that we need to innovate and educate constantly.

The digital world dos not stand still, and nor do we.

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