



mHealth 2030

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The last decade saw the start of the smartphone revolution. Ten years ago the iPhone was just three years old, around a quarter of us owned a smartphone, and the term mHealth was first coined. 2020 sees the start of a new decade where 79% of us own a smartphone, and 100% of those ages 16 to 24 have access to the internet via a smartphone. 327,000 health apps have been created and 5 million health apps are downloaded every day.

But, whilst there has been an explosion within the fitness industry and uptake for GP online services have seen fast growth, mHealth is not yet part of the fabric of the NHS, nor is it widely adopted amongst those who could perhaps benefit the most.

We ask worldwide leaders from across mHealth: what will the next decade bring? What will apps deliver by 2030? What will be the biggest barriers faced by the industry? And what do governments need to do to contribute?

We spoke with:



Niels Chavannes,
Professor of
Primary Care
Medicine, and
Founder of
National eHealth
Living Lab, the
Netherlands



Joe Kvedar,
Professor of
Dermatology,
Harvard Medical
School and MD,
Connected
Health



Heather Cook,
Chief Innovation
Officer, Brain in
Hand



Martijn de Groot
(Ph.D.), Radboud
University
Medical Center,
Director,
REshape



Priit Tohver,
Advisor for e-
services and
innovation at the
Ministry of Social
Affairs, Estonian
Government

We hope you find our look into the future thought provoking. To find out more, or start your journey into the future of mHealth, get in touch.

A handwritten signature in black ink, appearing to read 'Liz Ashall-Payne'.

Liz Ashall-Payne
CEO and Co-Founder, ORCHA



WHAT WILL APPS DELIVER IN 2030?

Apps are changing the health and social care industry. The ubiquitous smartphone has found its way into the pockets of nearly every clinician, care provider and patient in recent years, and, by 2030, the development and integration of apps will have helped transform the way services are delivered.

By 2030, apps will have reached a mainstream position sitting alongside traditional support services, having established a solid evidence of reducing healthcare costs, improving the efficiency of care delivery and enabling greater access to high-quality care via telemedicine.

mHealth will be prescribed, seen as an everyday toolkit that patients use alongside or instead of drugs. Self-management with remote monitoring via a health app will be as acceptable to a patient or care provider as traditional methods of care delivery are today.

In particular, with the ever-increasing number of people living with a long-term condition, alternative ways of delivering improved outcomes has to accelerate – and the evolution of apps, integrated into care pathways, will form part of the solution to meeting increased demand.

Priit Tohver, Advisor for e-services and innovation at the Ministry of Social Affairs in the Estonian Government, observes, “Apps can be pivotal in elevating the patient from consumer to partner in their own care. By 2030, when planning the care journey of various patient groups, we in the healthcare sector should feel comfortable maximizing how much of this journey can be undertaken by the patient alone with their smart device in hand, screening the appscape for suitable tools.”

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USER-CENTRICITY WILL WIN

But which apps? The patient will be central to the success or failure of apps. Niels Chavannes, Professor of Primary Care Medicine, and Founder of National eHealth Living Lab, explains: “The current problem we face is that there are too many apps to choose from and they do not evolve to keep the user’s interest.”

“In the future, only apps that meet a true need for the consumer will thrive. They will have a unique selling point and make regular updates, driven by persuasive design seen today in the gaming industry.”

Brain in Hand is an example of Digital Health designed to meet the needs of a clear set of users: people with impaired executive functioning, such as autism. Its Chief Innovation Officer, Heather Cook, agrees with setting a clear, defined mission: “We are driven to increase the independence of our users. It’s what they and those who support them want. We aim to put our users in control of their own support and offers the ability to interface and collaborate with their support provider.”



WE'LL CRACK STICKINESS

However, attracting people isn't enough - many of today's apps face stickiness issues. Joe Kvedar, Professor of Dermatology, Harvard Medical School and MD, Connected Health, explains, "It's extremely challenging to keep individuals adherent to their treatment regimen or motivated to maintain healthy lifestyle choices. The always on, always available app, is key to driving that behavior, and designers will get smarter about creating platforms that keep individuals interested and even focused on their health."

"Focus on meeting the user's health and entertainment needs, must be complemented by science and evidence."

Our better understanding of the mindset of health consumers will lead to new behavioural incentives to maintain engagement. But, Chavannes warns, "This focus on meeting the user's health and entertainment needs, must be complemented by science and evidence. Research has found that some misjudged apps create an immediate jump effect, but usage falls off, and can leave the user less active than before using the app."

One area we see good examples of gamification with positive evidence is within the smoking cessation field. Here, personalised messages, nudges and looks are making the apps sticky and delivering life changing results.

Increasingly, apps will follow this need + gamification + science approach.

ONE COMPLETE PICTURE

Another big change we anticipate is that data from apps will be aggregated. Liz Ashall-Payne, CEO and Co-Founder, ORCHA, says, "We see that there will be a move from the silos we see today, to an ecosystem of data. This will enable clinicians to access one picture, pulling information such as blood glucose, exercise and diet, from a variety of apps into one dashboard." This extends the personalised, integrated, whole life proposition that apps will offer.

Tohver adds, "When properly integrated, even simple technologies can be advantageous, allowing pattern detection, and enabling patients to address their health needs and questions swiftly and at the appropriate level, reassuring the patient while not overburdening the professional."

With improved integration, analytics and emerging technologies like AI and voice recognition, we'll also see more and more uses in the soft science of wellbeing. Kvedar gives examples: "we will see apps being prescribed to address issues such as loneliness and isolation in older adults, 'silent killers' that can significantly increase the risk of cardiovascular disease and stroke, more rapid progression of Alzheimer's disease, and other critical medical issues."



WHAT ARE THE BIGGEST BARRIERS?

Today, there are five barriers faced by the industry:

1. **Governance & risk management** - The lack of clarity around the appropriate evaluation and governance foundations brings uncertainty.
2. **Trust & safety** - the lack of a clear assessment regime prevents professionals from being able to differentiate between safe and unsafe apps.
3. **Systems & process** - Professionals are not yet given the tools to embed digital health into day to day working practices.
4. **Awareness & habit** - apps are not yet part of training and development or the day-to-day management of conditions, and so inhibits confidence.
5. **Return on investment** - evaluation of impact remains a challenge and so inhibits adoption.

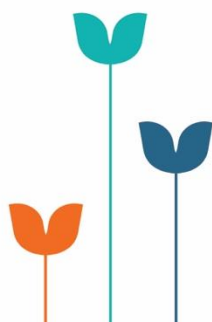
These barriers will each be overcome over this next decade. Governments will set the bar for standards, with a clear process for applying the criteria and an active programme to raise awareness amongst professionals and consumers. This will be accompanied by a drive to educate the workforce with training and education, in order to change the culture and sentiment towards mHealth.

UPCOMING AND CHANGES TO REGULATION

The upcoming Medical Device Regulation (MDR) law which comes into effect this May 2020, is the issue at the forefront of most people's minds. It's one of the biggest requirements app developers will face, as it is needed to get the CE mark required to supply apps in Europe. Martijn de Groot (Ph.D.), Radboud University Medical Center, Director, REshape, explains, "This law regards mHealth as a class IIb medical device and so demands clinical evaluation. This will lead to even fewer products reaching the healthcare system, especially from startups - to deliver such clinical evaluation demands large-scale financial injections, achievable by large organisations, or those attracting investment or government funding."

De Groot adds, "That said, those that succeed may be of a higher quality, and this EU law may have less effect in the UK after Brexit. In a no deal scenario the UK's current participation in the European regulatory network for medical devices would end, and the MHRA would take on the responsibilities for the UK market currently undertaken through the EU system."

But Tohver questions if MDR will impact all health apps, saying "General wellbeing and information apps shouldn't be classified under MDR. Indeed, it has been one of our questions when implementing the NICE framework: What is the overlap, so that we don't evaluate the same things twice? So far, we have concluded that there are significant differences and that fewer mHealth applications fall under MDR."



Today, most regulation still isn't set up for the dynamic pace of app software development. By the time a product has passed or failed, the assessment is irrelevant as the product has since evolved. To help overcome this, Cook calls for standards to be in proportion to a product's purpose and impact: "Getting the right balance of standards will be vital for the future of the mHealth market. An overkill of standards, assuming that apps should have the same level of standards as a traditional device or care treatment plan, if not in proportion to need, would be a major barrier to mHealth."

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Tohver agrees: "There is definitely a need for a tiered approach to app assessment. A simple, informative app should not undergo the same rigorous vetting process as a diagnostic or a treatment support. This thinking has not necessarily made it to health technology assessment schemes, meaning that small companies with simple, yet potentially useful, applications do not have a feasible way to establish themselves within healthcare systems, because they have to meet the same standards as certified medical devices."

mHealth technology includes many layers that can affect data security, privacy, and confidentiality. Cook highlights the public's concerns about how their personal information will be used, highlighting "Companies developing solutions need to ensure that sufficient development time is set aside to analysing, identifying and protecting potential vulnerabilities, alongside the need to demonstrate interoperability with providers and commissioners of health and social care mHealth solutions."

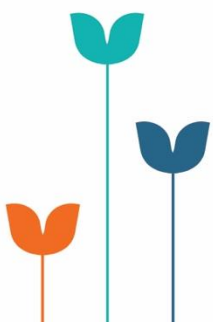
By 2030, however, our approach to regulation will take account of this. There will also be less tension between regulation and innovation. Ashall-Payne reassures, "Today, regulation is used more as a 'stick' than a 'carrot', but we will see a move to a more proactive, positive approach, flagging to developers that if they can meet a requirement, then they will be able to enter a market."

HUMAN NATURE

An equally concerning barrier is physicians' resistance to change, and their reticence to adopting technology in care delivery. More will need to be done to ensure appropriate digital training for clinicians, or a 'knowledge gap' will grow between current and future staff. Cook sees this, sharing, "Even over the next decade, pockets of resistance to disrupting human centric care provision with apps, will remain, but the wider growth in patient-centred care models will, in part, help to overcome these barriers."

"Digital health should be part of mandatory staff training."

To avoid a knowledge gap forming, alongside looking at our future workforce, we should also look to the current front-line staff. Here, digital health should be part of mandatory staff training. Digital shouldn't be bolted onto the curriculum, but embedded throughout. Being pragmatic, to start with, there should be at least one digital health module in every pre-qualification curriculum.



Kvedar shares progress being made: “I’m pleased to be working with the Association of American Medical Colleges (AAMC) Committee on Telehealth to change this dynamic by including virtual care training into the medical school curriculum. A set of competencies will help to prepare medical students and residents for this new kind of care delivery and make it part of their mainstream practice.”

COMMISSIONING

The commissioning of health apps today is a national lottery, fragmenting the market for developers and access for patients. Over this decade, however, the commercial arrangements with developers will mature, with national tariffs arranged for mHealth solutions, and a payment system for developers that is linked to the point of prescription. Ashall-Payne says, “This will be a great improvement, putting more power in the hands of the clinicians closest to the patient.”

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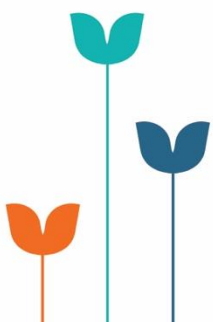
“In order to bring this scheme to fruition, national bodies will need to pump prime investment into the system whilst the process is changed, with existing systems running in tandem while the national scheme is established.”

HOW CAN GOVERNMENTS HELP?

When asked, our experts identified a range of ways in which Government action can help manage and grow mHealth over the next decade.

They called for Governments to establish clearer guidance on technical and clinical minimum standards thresholds, providing developers with the necessary support to accurately meet its needs, including education on information governance requirements for patient data, outlining acceptable ROI business cases, and clarifying the legislative and regulatory requirements.

It was also recommended that Government bodies help providers to avoid the duplication of public resources. Cook called Government organisations to “Provide support to health and care providers to navigate the minefield of potential mHealth solutions, undertaking a certain level of due diligence centrally so that commissioners feel more confident integrating a new system into an existing health and care pathway.”



BLUEPRINTS AND INCENTIVES

Governments need to, above all, manage the change. Tohver shares, “Health apps are not going anywhere, so how can we, as regulators, facilitate their integration with the healthcare system to a reasonable degree? This requires educational efforts, testing environments, new assessment approaches, reimbursement schemes and opening up e-health systems, to name just a few key actions.”

Initial steps are being taken in forward-thinking countries. Over the past year, The Netherlands has put in place steps to establish how the public and clinicians can find the best and safest apps. Niels explains, “We have started with mental health, taking a proactive and thorough programme in this area. Collaborating with all stakeholders, we now have a library of mental health apps that everybody agrees are fit for purpose. Our approach is now a blueprint that we will follow for other health categories.”

The majority of health apps are designed to avoid attendance at a GP surgery or hospital, either providing information or tools to stay well, aid condition management, or help in recovery. As such, alongside a blueprint, measures and incentives must support change. Ashall-Payne explains, “Most national health bodies provide no incentive to today’s health providers to adopt mHealth, as they’re paid upon seeing patients. With overstretched health services, Governments will need to fundamentally look at the complete incentive system, compensating providers whose patients are in good health and able to stay away from the service. Rewarding good health, not illness.”

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AN INTERNATIONAL PERSPECTIVE

Experts share how governments can reconfigure a society to proactively create systems and policies that positively impact citizens. Kvedar shares, “One example that I talk about in my book, *The New Mobile Age*, is the way in which Japan is a perfect illustration of how, with nearly 30% of its population over the age of 65, Japanese society has made significant changes to accommodate this age group, from training social robots to assist people in their homes, to changing supermarket design to make it more ergonomic for older bodies. An increasing number of older people are returning to work or staying on the job, not for financial reasons, but because they are needed in the workplace as the younger population is dwindling. Japanese society also recognises that keeping people engaged and productive correlates to maintaining health; it also makes economic sense to keep people employed, rather than caring for an ageing, retired population.”

Supporting this view of looking on a worldwide basis for best practice in mHealth adoption, Chavannes highlights that the Netherlands’ health challenges and user needs are not unique. In order to make change to the world’s health on a large scale, he says, “I call



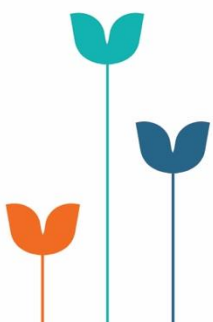
Governments across the world to team up to share best practice, drive mHealth standards and so adoption. We often focus on our national differences, but there is more we can share and learn from each other.”

“The real innovation will take place in continents such as Africa, where fewer systems are already in place. Working together, we will all learn a lot.”

IN SUMMARY

Now is the time to catch up and tackle the new governance, systems and education required.

We are at a pivotal point in time. Technological advances have provided us with the opportunity to include a wealth of new information and tools into our personal lives and healthcare services. Today, the market is unregulated, putting people at risk. Now is the time to catch up and tackle the new governance, systems and education required. Enabling healthcare services to harness the power and knowledge that apps can bring, and inspiring developers to create genius products that help solve our world’s health challenges, thereby improving even more lives.





Organisation for the Review of Care & Health Applications

