15 years ago the first hint of a diagnosis came from one source – your doctor. Today, health information is everywhere, and ‘Dr Google’ is the first place we go for a ‘consultation’ on that troublesome cough or inexplicable rash. One in 20 searches on Google is health-related, and the search engine has recognised this by increasing its efforts to provide more reliable health information.

Critically, the place where most people are searching Google, is their mobile phone. This year saw ‘mobile search’ overtake ‘desktop search’ for the first time - a move which signals the beginning of the ‘connected patient’. Effectively we can research our health or condition at any time, wherever we are on the planet.

The proliferation of the smartphone is set against a backdrop of health and wellness being at the top of our personal agendas. We - both as consumers and patients - are more tapped in to our health status than ever before, often taking personal responsibility, and action, to better our health outcomes. Tapping into the new-fangled tools at our fingertips has empowered us to manage our own wellbeing and, as a result, we are producing more health information than ever before. This expansion of our ‘digital phenotype’ - providing massive data sets (‘big data’) - means that patients and healthcare systems can optimise outcomes.

In an aging, increasingly complex population, where 70% of bed space in the NHS is being used by over-65s, and where children born today are the first generation that are predicted to have a shorter life-span than that of their parents, ‘digital’ presents an opportunity to revolutionise healthcare. Individuals and communities are taking responsibility for monitoring and managing their personal health, alleviating stress on healthcare systems, in the process. It points toward a new era in healthcare, which is certainly welcomed by those at the very forefront of service provision.

The connected ecosystem

The mobile health (mHealth) movement, while not new, has exploded over the past 12 months, with over 62% of smartphone users accessing health information from their devices. It’s predicted that, by the end of the year, over a third of users will secure information via a health app.

“Individuals and communities are taking responsibility for monitoring and managing their personal health, alleviating stress on healthcare systems”

These stats are as relevant for the digital native, as they are for the digital converts, such as the ‘silver surfers’ (around half of all over-55s own smartphone devices and regularly use social media).

What then is behind this switch and how can healthcare utilise the trend? Taking the stage at this year’s creative and tech festival ‘Digital Shoreditch’, we spoke about mHealth and the Internet of Things (IoT), explaining that it’s the increasing connectivity of devices, which has truly created these possibilities, nudging healthcare onto the verge of true digital transformation.

The IoT describes a network of connected devices that communicate with each other via wireless machine-to-machine communication. At present, there are 20 billion connections on the IoT, with this figure set to reach 50 billion by 2020.

As connections increase and opportunities to monitor our general wellbeing, as well as more chronic conditions, move with the times, there will be a natural drift towards disease prevention. Wearables such as the ‘FitBit’ or ‘Pebble’ track basic fitness measures, though with this technology we can track much more than traditional markers, and devices - such as the Apple Watch - with connectivity to healthcare systems, could usher in a new era of data collection.

This connected ecosystem provides healthcare systems with the power to move beyond monitoring, towards disease prevention – with pharma becoming a key conduit in the transition.

Pharma at the forefront

With 48% of healthcare professionals stating that they will introduce mobile apps into their daily practice, and around a fifth of patients using data from their own personal archives to inform their doctors, the foundations have been set for even more sophisticated
technology to enter healthcare systems - and it’s already started.

Novartis are championing the use of technology in healthcare, having done so through partnerships with some big names, such as Google and Qualcomm. Its smart lens technology, developed in partnership with the most popular search engine and general innovation specialists, utilises IoT to monitor circulating blood sugar levels via a contact lens. For diabetics this advancement means monitoring is 24-hours a day, and moves healthcare from prevention to prediction. These results could be reported to healthcare systems, who could activate emergency help, if needed, or send a medication reminder to a patient’s - or carer’s - smart device. The opportunities are endless.

For these interventions to enter the mainstream, healthcare must be more open to new digital channels, but who better than pharma to support this? For years, pharma has introduced new, life-changing medicines - it’s only a matter of time before the widespread prescribing of healthcare apps by doctors. This game-changer will open the door to even more advanced devices.

Formal partnerships between pharma and the NHS already exist in ‘Joint Working’, but there is more that can be done to support the delivery of the ‘NHS Digital Strategy’, which outlines the path forward for digital innovation in the NHS over the next five years.

The way forward: Embracing connected health solutions
Progressing health technology, and reaping the associated benefits, requires a true convergence of the medical and digital worlds, allowing for paths to be collaboratively mapped, and improved outcomes accelerated.

“For years, pharma has introduced new, life-changing medicines - it’s only a matter of time before the widespread prescribing of healthcare apps by doctors”

How to get there? There are a plethora of possibilities, with four key priorities sitting at the core:

1. Augmenting traditional market research, with continuous data collection, using revolutionary activity, from clinical trial design, to the foundations of stakeholder education
2. Identifying and pursuing diverse partnerships to bring together varied skillsets and complementary assets
3. Patient empowerment, via tailored and culturally-relevant initiatives, which meaningfully drive behaviour change
4. Consistent refinement of programming, through openness to both cross-industry and cross-company learnings

So, in summary, health being at the forefront of attention, coupled with the power of connections being relatively untapped in the health sphere, puts us in a unique position to revolutionise how health is managed at a personal and societal level. Collectively, stakeholders in the medical arena - whether doctors, healthcare systems or pharmaceutical companies - must embrace the tools we have to secure insight and communicate. This requires the support of individuals, so we can collectively empower populations, move towards an informed patient and, ultimately, enjoy better health outcomes.

The self-care era
The power of the connected device ensures that patients have access to huge amounts of personal information that we have been passively collecting for years, and now can do something with. Healthcare is a hugely personal industry and now both mHealth and the IoT can fundamentally change the way that patients interact with the healthcare system.

No longer will patients need to visit their doctor for a routine appointment – there’s an app for that. Consultations can take place remotely, when their smartphone tells them it’s time. Care can take place in the community, freeing up precious resources in the NHS, at a time when streamlining is essential if David Cameron is truly going to realise a seven-day health system. Without doubt, the efficiencies of a connected ecosystem would help ease the pressures on the NHS, where a £8 billion shortfall still exists. The ‘quantified self’ – tracking our daily lives – has become the ‘quantified us’, as populations of data also become available, allowing CCGs to identify disease specific geographical locations. Almost everything we do generates data – healthcare systems must adopt digital wizardry to take advantage of the self-care era.