



iCARE HPaaS



Introducing Health Care Platform as a Service

RWG is a mobile network and service provider, doing things differently.

We formed in 2015 to bring people together in our home country of Wales.

We were the first to deliver an all-Wales mobile network with WiFi calling, billing transparency and a bilingual customer experience all as standard.

Today we command oceans of bandwidth from the world's largest mobile networks. Plentiful, low cost, straightforward connectivity. We deliver and manage it just as it's meant to be - simply and transparently with you in control.

Now we're transforming affordable telemedicine and digital social care for society's vulnerable, in the world's most competitive markets.

The digital care opportunity

Take a seat in a coffee shop on any high street, and see what people are wearing on their wrists. Chances are it includes a smartwatch or fitness tracker¹ collecting their biometric data: steps, floors, heart rate, stress and sleep

patterns, just to name the common ones. All linking via smart phones to a health portal - proprietary, unfortunately - for graphing, trending and some limited sharing.

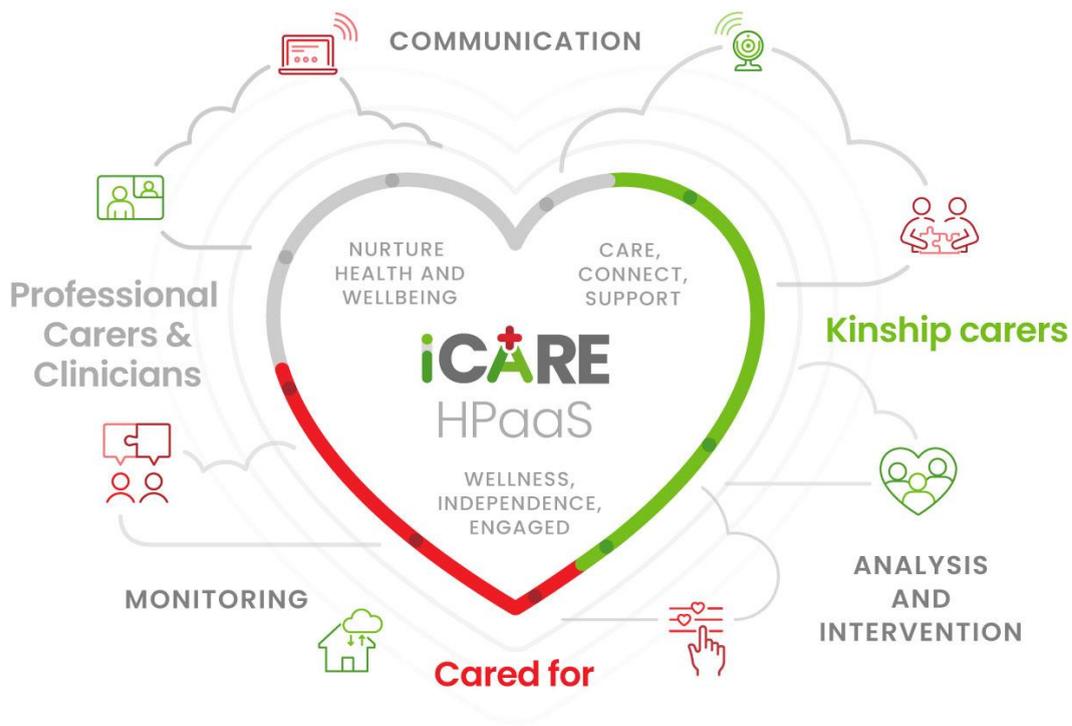
The rise of digital health tracking among the mostly affluent, mostly healthy population points the way to a revolution in health and social care for everyone.

Shift the setting from coffees to care, and widen the field of view beyond wearables to include medical-grade remote devices and smart sensors of all kinds. Globally, one in three people² live with multiple chronic conditions. In the UK, 14 million³ people live day-to-day with a limiting long term illness, impairment or disability and may require the active involvement of a healthcare or social care professional. How could affordable, intuitive, digital health and wellbeing tracking transform their quality of life? And how might scarce professional resources be made more efficient, more responsive, and generate greater impact and benefit?

¹ 1 in 3 UK adults have and use at least 1 wearable device, as of January 2022: [YouGov](#)

² [The global burden of multiple chronic conditions: A narrative review - PMC \(nih.gov\)](#)

³ [UK Government National Disability Strategy, 2021](#)



Introducing Healthcare Platform as a Service (HPaaS)

If we weren't familiar with Zoom and Teams, Office 365 and Google Workplace pre-pandemic, we definitely are now. These are software-as-a-service (SaaS) examples. The provider takes responsibility and control of everything from servers to software, development and user data. They work 'right out of the box', and you just pay-as-you-use. There's lots to like.

What if innovation is your goal? What if you want to build new services that shift the status quo? Then you opt for a platform-as-a-service instead. All the power of a Cloud consumption model, with the added benefit of directly shaping the development of the final service, either by yourself or in collaboration with a partner.

Which brings us back to the digital care opportunity. Picture a health and wellbeing platform capable of collecting information from every kind of connected, remote monitor and smart sensor. The platform is totally 'open' - through published APIs - allowing you to create your own digital care ecosystem.

This platform has three sides, embracing carers, the cared-for, and their friends and families too. Because physical and emotional wellbeing are intimately linked, and isolation is the enemy of both.

Imagine the platform analysing lakes of data, delivering instant snapshots for immediate action. And think about the insights it should be able to uncover. The subtlest trends are often the most significant. Near-invisible to short human attention spans, they can be captured and plotted by AI. So that everyone that cares - professionals,

families and friends - can reach out, get involved, make a proactive intervention.

And not least, know that the platform - with all of its rich data - is curated not by some Silicon Valley behemoth but by you, the professional healthcare or social care provider.

That's what Health Platform as a Service - HPaaS - looks like. We call ours iCare.

iCare - HPaaS that's all yours, right now

RWG iCare provides everything you need to deliver remote digital healthcare and social care affordably, right now. Platform, development skills *and* real-world experience.

In the home or care setting

The iCare Home Hub is the gateway connecting sensors and service users (the cared-for) with the Cloud and their carers. It's open and agnostic, so you can choose and connect any Bluetooth or GSMC-connected sensor or device.

Uniquely, the Home Hub runs a version of Google's Android operating system - Android TV. Think 'Hey Google - turn on the lights' - and means that thousands of Android-compatible apps can easily be integrated into the care service.

With Android TV the service user's own television - equipped with a camera and microphone - becomes a hub for voice and video calling, messaging, notifications and calendar reminders. So carers, the cared-for and family members stay connected in the simplest and friendliest way imaginable.

Each iCare Home Hub comes equipped with an RWG Connected Networks SIM

for instant connection. The device itself is fully remotely managed. And the mobile data is pooled and fairly shared among all service users.

In the Cloud

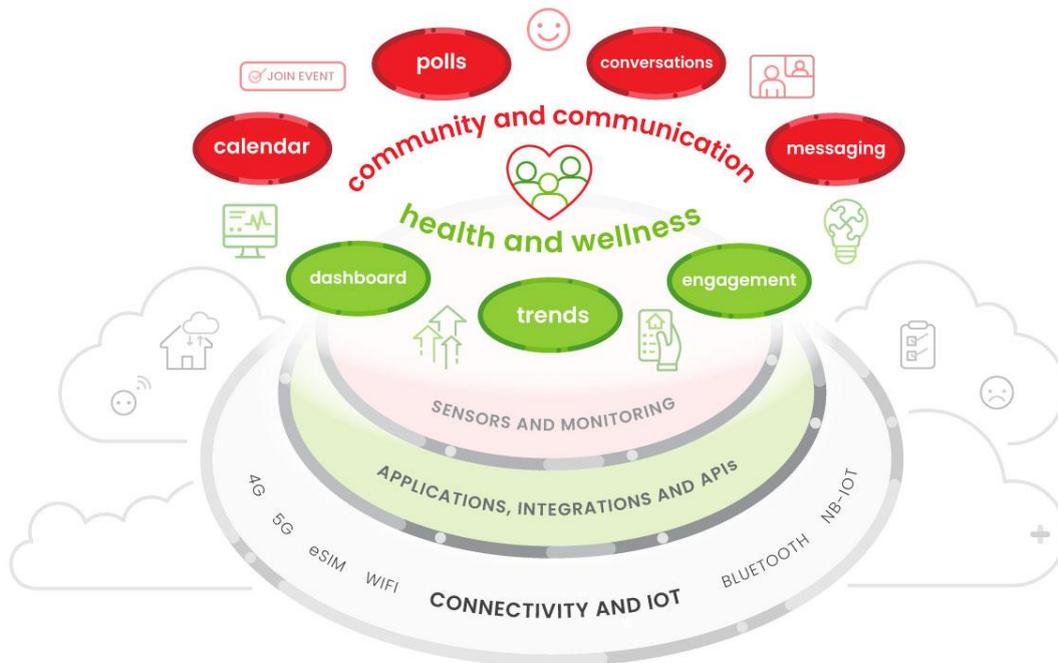
iCare HPaaS - Healthcare Platform as a Service - is delivered from the Cloud as a per service user, per month subscription.

Using pizza as a metaphor, just as each layer (base, sauce, cheese, toppings) contributes to the overall taste, so each layer of the iCare platform builds to deliver the final service. Is there a 'margherita' version of iCare? In the sense that we have basic service layers in place, yes there is. Best to think of it as a starting point for creativity and innovation. The beauty of a platform - and a pizza - is that you get to design your own. More detail and options in the diagram.

In the picture

Your window into the wellbeing of your service users is the secure iCare portal, accessed through any mobile or desktop browser. Lots of analogies work here - a help desk, a dashboard, a social meeting and sharing space.





iCARE HPaaS | The pizza diagram

There are real-time views, and trend views. Carers can take a global view, or focus on their circle of service users. Professional users and family users have separate views too. The iCare portal forms a substantial part of an operations centre for remote digital care. And through its APIs it is easily integrated into third party booking systems, case management systems and so on.

In collaboration

We bring technical and real-world service expertise to the table. We understand that you are pioneering and innovating at the same time as keeping existing services running - fixing the rocket in flight, as it were.

Digital transformation isn't easy. We're familiar with the compliance obstacles that you face. Rely on us to help you figure out what's possible in the here-and-now, and what changes are on the horizon. With innovation there's

no such thing as a perfect blueprint and it's often better to test and iterate. So we can help you establish proof of concepts, pilots and more.

Finally, if you have the time and resources, there are low-code and no-code options to help you develop features and functions on the iCare platform. But also know that we have a development team ready to help you put your vision into action.

iCare in remote healthcare

During the pandemic, hospital emergency departments triaged patients initially by video, and scheduled in-person appointments with doctors. Radiology consultants avoided unnecessary contact by reviewing imaging from home. Primary care practices took to telephone and video consultations like ducks to water.

Some of those changes look like they're sticking, even though the temptation to 'go back to normal' is enormous. That said, basic checks like temperature and blood pressure still mostly require a visit to a surgery, or a home visit by a professional.

So perhaps it's apt that the focus for innovation falls firstly on the chronically ill where their condition or location makes travel difficult. Pulse oximetry, blood glucose, blood pressure and temperature checks are routinely automated. iCare connects service users and their biometric data to remote healthcare professionals and carers.

Service users initiate regular tests at home which are automatically uploaded to a database at, for example, a nurse-led service centre. Carers can make regular check-ins and respond to worrying readings, using audio or video via the person's TV set.

Familiar technology makes the system easy for people to use. Being able to see and hear friendly faces is reassuring. When you know someone's looking after you, you feel less alone, and less stressed. It adds up to compassionate arm's length care that feels face-to-face, and can be delivered at scale.

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eHealth in Texas, USA.**

Where next?

The pace of change in wearable sensors and smart technology feels profound. Single-lead home ECG devices that check for a regular sinus rhythm and atrial fibrillation in susceptible individuals have been around for a while. Now there are also smart watches and consumer blood pressure monitors that reliably (e.g. USA FDA approved) do the same job. New sensors are coming to market that improve on old techniques - a good example is continuous glucose monitoring, replacing finger prick tests. And there's a huge amount of research into finding non-invasive proxies for important biometrics - such as heart rate variability (HRV) as a working measure of physical stress. If prevention is better than cure, then the focus could naturally expand to include regular, inexpensive monitoring of susceptible but otherwise well individuals. What's needed is an open, healthcare platform (HPaaS) that lifts the burden of mass monitoring off scarce clinical experts. What's needed is iCare.

For social care at home

Helping people live in their own homes longer while staying as independent as possible is one of the key goals of social care. Local authority budgets are under enormous pressure, so it's important to find ways of caring that don't rely so heavily on in-person visits, and which allow innovative *new* care services to be delivered at very low marginal cost. During the pandemic, when face-to-face contact had to be limited to essential personal care, digital

encounters started to fill some of the voids. Zoom calls with family members and physiotherapy sessions by video, for example. We got a taste, borne of necessity, of what might be possible. But there's a better starting point than sheer necessity.

'What could good look like?'

What could good look like? If we reimagined service delivery? If we could harness all of digital's potential? If it could augment - or optimise - irreplaceable in-person visits?

We could start with combating loneliness, which isolates and drains the joy out of living for so many older or less mobile people. The three-sided iCare platform - carers, the cared-for and their friends and families - is geared towards social interaction. It has standard calling and video calling, for scheduled or spontaneous encounters. It has messaging, diaries, reminders and alerts. The iCare portal has tools for checking the mood and levels of engagement of service users, which can act as prompts for contact. And it uses the most intuitive of tools - a TV set, a remote control and (optionally) voice

activation - 'Google - call my daughter'. Bandwidth (and batteries...) included.

In the right settings it's possible to go significantly further. Smart sensors in homes can detect falls, and iCare can automate action. A first step might be to initiate a video call with a carer, popping up a familiar face on a TV set. The next might be to scramble some physical help, or a paramedic. Movement sensors and location awareness, patterns of use for lighting and heating, information from wearables. Pop-up quizzes about mood, or medication. All of this information can be analysed to create a detailed 'wellness' portrait of the cared-for individual. Are people varying from their established routines? Are they more, or less, sedentary? Are they too warm, or too cold? Are they taking their pills?

AI can make sure that trends are spotted and highlighted, prompting a video call from a professional carer or family member. Does the individual look well? How does she sound? How well is he moving? Checking in and pre-empting problems.

This thing is exactly what you make it.



What prevents you?

Change can be difficult. We can help you to:

- Design a proof of concept or pilot with meaningful, manageable outcomes
- Scope and justify budget
- Build *your* iCare HPaaS experience

Can we help you connect?

Our expertise is in creating connected, resilient communities, including the neglected, isolated or chronically ill members of society, using highly affordable, simple technologies.

It was the experience of working with local and often remote communities in Wales that opened our eyes to the reality of loneliness and to the power a strong community has to pull everyone together. We've seen the difference it makes when you give people the tools to connect and make them simple and intuitive to use.

Our ability to appreciate, de-code and alleviate quite deep societal problems through innovation and technology is making an impact in the field of remote

Our Team

The RWG team has over 100 years of telecoms experience ranging from C-Level technical and managerial expertise. Each of the team have bought and sold technology companies in the last 10 years and have come

together to create a bespoke solution to community connectivity.

Andrew Davies, CEO

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Chris Boulton, CTO

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Terry Meredith, Business Development

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