Mobile healthcare (mHealth) is revolutionising and enhancing the way healthcare is delivered to patients across the globe. A well crafted mHealth service can deliver key benefits to healthcare providers, patients and society as a whole. Appdragon SmartMed™ is a portfolio of products & services aimed at enabling healthcare providers to deliver complete, effective, end-to-end mHealth solutions.

With a rapid increase of chronic conditions such as diabetes, obesity, heart disease and respiratory problems, healthcare providers are under increasing pressure to deliver quality care, whilst reducing costs. Mobile healthcare utilises the latest technologies to meet this challenge head on.

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mHealth is changing the way healthcare is provided around the globe. Appdragon is here to help you lead the way.
WHAT IS MHEALTH?

MHealth is the exploitation of rapidly advancing mobile communications technologies in order to deliver enhanced healthcare, anywhere, at anytime and to everyone. It has the potential to improve the lives of millions, across all countries (developed or developing) and in all walks of society.

In the face of growing pressure on healthcare providers and governments faced with frightening growth in cases of chronic disease and a burgeoning elderly population, mHealth empowers the patient to take control of their own healthcare monitoring and management.

mHealth is affordable and accessible to all. This is because mobile communications is prevalent in most countries, including the developing world.

Governments, NGOs and healthcare providers are struggling to meet the demands for healthcare and the associated costs of providing it. By empowering the patient costs can be significantly reduced, whilst increasing the level of care provided.

INTRODUCING SMARTMED™

SmarthHealth™ from Appdragon utilises mobile technology to enable a number of important mHealth services including automatic health monitoring in the home or community.

SmartMed™ makes the prevention & management of conditions and chronic diseases possible from within the patient’s own home, by empowering them with the tools and confidence to self-manage their condition.

SMARTMED IMPROVES LIVES

Patients are equipped with a smartphone or tablet app and medical devices that are easy to use and wirelessly connected. The app is used to take various tests in order to monitor the patient’s condition and progression. The results are transmitted back to the healthcare provider via the Internet where they are analysed by qualified clinicians allowing interventions to be prescribed.

Using SmartMed can:

• prevent illnesses occurring by triggering interventions, either by the patient or nurses and doctors through continuous care and lifestyle coaching.
• empowers the patient, decreasing anxiety levels and understanding of their condition.
• allow the elderly and vulnerable in society to remain living in their own homes rather than a nursing home or hospital.
The ever increasing prevalence of mobile communications has revolutionised the way we undertake many social activities. mHealth has brings potential benefits for all stakeholders - healthcare providers, the patients, their family, friends and informal carers and, of course, society benefits as a whole.

mHealth can help reduce the costs of providing quality healthcare to all participants in society by reducing pressure on overburdened hospitals, clinics and GP surgeries by enabling more monitoring and diagnostic procedures to be undertaken in the home or community setting.

Reduced A&E admissions, shorter periods of in-patient care, quicker post operative discharge and a need for fewer, less frequent out-patient attendances are just some of the potential benefits that a well implemented mHealth solution can bring.

By empowering the patient and their informal carers, mHealth can also reduce stress levels and increase the competence of patients to allow them to self-manage their symptoms and conditions.

As a result of enhanced care, life expectancy should increase, fewer working days will be missed and health insurance premiums could decrease. Importantly government & healthcare provider spending can reduce.

*Facts & figures are actual outcomes from Bangladesh pilot.*
THE SMARTMED™ APP

Our specially designed app runs on Apple iOS and Android devices - smartphones and tablets. It has taken over 18 months to develop & continues to evolve, with input and feedback from patients and our expert clinical advisors.

The app enables the patient to manage a range of conditions including Respiratory (e.g. COPD, Asthma & Hypertension etc.), Diabetes and Heart & Coronary conditions (e.g. heart disease, high-cholesterol, high blood pressure etc.). It also enables post-operative patients to be discharged sooner, monitoring their own recovery at home.

The app connects to a range of medical devices using Bluetooth wireless technologies, allowing the patient to capture key measurements and samples, such as blood sugar, blood pressure, peak flow, blood oxygen, pulse rate and more.

Patients are gently reminded by alarms and pop-up text on the smartphone when a test is required, or even when a clinic appointment is due, or when medication needs to be taken. They are then walked through the process of undertaking the tests, step-by-step, with graphical guides available.

Patients are also asked to answer tailored questionnaires, gathering more general data on their well-being (such as how well they are sleeping, the amount of exercise they’re getting, urine colouration, level of pain around affected areas etc. etc.).

The app also includes tools for gathering other information such as Respiratory Rate, Height, BMI and for capturing images of affected areas or surgical wounds.

All of this information is beamed back to the healthcare provider using the patient’s existing wifi and broadband connection, or 3G mobile data where this isn’t available. Here it can be analysed and stored by qualified clinicians so that trends can be established and interventions can be made if necessary.

Patients can also communicate with the healthcare provider using the app, via text, voice or video messaging.
THE HEALTHCARE PORTAL

The healthcare provider is provided with a web browser based Healthcare Portal which enables clinicians to view patient data as it is received - in near real-time.

The portal allows users to view historical test results in tabular or graphical form so that trends and comparisons can be formed. Thresholds can be set for each test, triggering alarms if the threshold is breached, enabling effective triage and ensuring the prioritisation of those patients most in need of intervention.

Red, amber & green indicators are used on the Patient Dashboard view, which clearly shows the overall status of the patient at any point in time.

The portal allows messaging between users, so that patient data can be shared amongst other clinical users and that intervention actions can be allocated.

A messaging function allows clinicians to instigate communication with the patient via their smartphone or tablet - either text messaging (including SMS and app Push Notifications) or voice and video chat.

COMPLETE SOLUTION

Appdragon doesn’t just dabble in mHealth and we don’t focus on one particular aspect. Our mission is to provide a complete, end-to-end healthcare solution utilising the very latest in mobile technologies.

Our SmartMed™ service provides a range of medical devices to enable the patient to undertake tests in their own home using their smartphone or tablet device as the recording hub. Devices are connected to the phone using the latest wireless technologies such as Bluetooth™ BLE, and data is transmitted seamlessly back to the healthcare provider via the SmartMed™ web portal.

SmartMed™ allows diagnostic tests across a range of conditions, including heart & coronary, respiratory and diabetes. Tests include Blood Sugar Levels, Cholesterol, Respiratory Rate, Peak Flow, Blood Pressure, Pain Levels and ECG.

An intuitive, easy to use user interface (smartphone app) guides the patient through the process of capturing key medical data and our text, voice and video chat facility means that expert advice and comfort is always on hand.

REMEMBER THE BENEFITS

Reduced costs of providing healthcare
Empower the patient to reduce anxiety & stress
Enhanced quality of care
Anytime, anywhere, everyone

Clinic attendance reductions recorded during Bangladesh pilot.
MEDICAL DEVICES

SmartMed™ comes with a range of optional medical devices, many of which are seamlessly connected to the smartphone app using the latest Bluetooth technologies.

The current portfolio of devices and tests that can be performed includes:

- **Pulse Oximeter** - we use finger-style pulse oximeters from leading manufacturers such as Nonin to capture blood oxygen levels (spO₂) and pulse rate (BPM). Connectivity is wireless using Bluetooth.
- **BP Meter** - this is an arm-cuff type BP meter that connects wirelessly to the smartphone hub.
- **Peak Flow Meter** - the Appdragon Peak Flow Meter is supplied by leading German manufacturer Vitalograph and measures the maximum speed of a patient’s expiration (airflow through the bronchi) to establish the degree of obstruction in the airways.
- **Thermometer** - our in-ear digital thermometer can be used to wirelessly capture the patient’s temperature.
- **Weigh Scales** - by capturing the patient’s weight on a regular basis and comparing this to results obtained with other devices, physicians can build up a picture of how the patient is progressing. Rapid weight loss, for example, is often a sign that a patient’s condition is deteriorating. Weight can also be used to automatically calculate the patient’s BMI.
- **ECG** - we offer three types of ECG unit including a 3-lead, a 12-lead and the latest leadless ‘mini’ ECG devices. All can be connected to the smartphone using Bluetooth.

We are constantly researching and developing new medical devices including those that could be used in optometry, urine & sputum analysis and many more.

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MISSED APPOINTMENTS DOWN 30%

Appointment reduction experienced by NHS as result of SMS based Appointment Reminder service.
CASE STUDY - BANGLADESH

Bangladesh, like many developing countries, is struggling to meet the increasing demand for healthcare. The overpopulated country is struggling to cope with growing instances of chronic disease such as diabetes, heart disease and respiratory conditions. The largely privately funded health industry doesn’t address the needs of the poorer members of society, especially those located in rural or outlying urban areas.

Appdragon is equipping over 10,000 of the 300,000 community health workers in Bangladesh with a localised version of SmartMed™. This includes medical devices for testing and an Android tablet with 3G connectivity.

Using SmartMed the health workers are able to capture key patient data in the community clinics or patient’s home and the initial diagnosis is then completed remotely in the City based health centre.

This reduces the need for patients to travel to city clinics or hospitals for often unnecessary and expensive tests and treatment - improving their health and allowing them to continue working or looking after their families.

For more information visit www.mhealthcaresolutions.co.uk.

YOU CAN TRUST APPDRAGON

Appdragon are small enough to care and big enough to deliver. It is part of the group of companies that has delivered mobile solutions to over 100 global companies for more than 10 years.

Our satisfied customers include the NHS, BT, Royal Mail and RBS as well as several Governmental departments.

We have successfully deployed solutions in many countries including the UK, Bangladesh, the Netherlands, Germany, USA, France, Singapore, India and Switzerland.

To hear more about Appdragon and our mHealth portfolio please visit our web-site or our satellite site at:

www.iappdragon.com
www.mhealthcaresolutions.co.uk.

Alternatively, you can email us at info@iappdragon.com or to speak to someone about your requirements, call us on +44 (0)844 826 5569.

EXAMPLES OF DATA CAPTURED

- Blood Oxygen (spO₂)
- Pulse Rate (BPM)
- Blood Sugar (mmol/L)
- Blood Pressure
- ECG
- Peak Flow Rate
- Weight, Height, BMI
- Food Intake / Fasting
- Exercise Undertaken
- Respiratory Rate
- Pain Levels
- Images & Video
- Patient Well Being Questionnaire
- & many more....

HEALTHCARE IMPROVED FOR ALL
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