**Interoperability: what's it all about?**

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## Interoperability: what's it all about?

In recent times there has been a boom in the number of quantified self devices available for consumers on the market. The famous 'fitBit' is an example of a device which falls under this popular quantified-self movement. These types of devices feed vital signs such as blood pressure and heart rate to the user so that they can observe these functions in real-time and track them over time. It is projected that by 2019, over half a billion wearables will be used globally with 16.4m of these in the UK, according to an analysis by International Data Corporation. Of these 16.4m, two thirds are expected to be used for health tracking. So the demand to track one's health is tremendous. However, the ability to allow the data to flow from for example one's FitBit into one's health record is not there yet.

As digital health continues to progress; and innovative solutions are popping up everywhere, it's time to talk about the elephant in the room: "How can these new solutions be linked up to the NHS to allow data to flow seamlessly into peoples' personal health records?" The term which defines the ability of different digital platforms or services to interact is 'interoperability', which is a big buzz word in Digital Health.

Let me take you through an example to demonstrate why we would actually want wearable quantified self devices to be interoperable with the NHS:

So, take Jim-he's 37-year old and lives an unhealthy lifestyle (poor diet with little exercise). He goes to see his GP and is diagnosed with Type II diabetes. He receives a booklet giving him an overview of the ways he can make his condition better: eat healthier and try to exercise, take your medication when required and test your blood sugar regularly. He leaves the doctor's surgery and goes home. Six weeks later he comes back to the GP for a check-up. His condition has worsened and he feels very de-motivated. The clinician asks him about how his diet and exercise plan is coming along- Jim says it's fine. He even shows the doctor his data stored within his Fitbit to demonstrate his step-count each day. However, the doctor cannot use this information as it is not a trusted source of clinical data. Jim leaves feeling even worse. He doesn't manage to take control over his condition and eventually has to use insulin to control his blood glucose level.

Now, let us consider Jim's condition if he used an interoperable health service. Jim is diagnosed with Diabetes and receives information about how to control his diabetes by using the MyDiabetesMyWay platform. His fitBi' is linked through data exchange layers into his health record as well as his blood sugar recordings through a blood sensor technology. When he goes home after receiving his diagnosis he uses

MDMW to familiarise himself with self-management of Diabetes and finds lots of useful hints and tips on how to control it effectively. After several days of poor glycaemic control and very little step-count, Jim receives a message from his GP to ask if everything is okay and if he needs some extra support to control his diabetes. The GP was able to view the trends in Jim's personal data and acted accordingly. Jim accepts additional support and gets back on track to good glycaemic control.

This is a very simple example but it demonstrates how people can be better supported because their wearable devices can interact with their clinical data stores to give the GP a look into the patient's day-to-day struggles with their condition. Thus, well-informed decisions from the clinicians can be made and in real-time.