Delivering the Digital Future Today

Accelerating Remote Patient Monitoring During the COVID-19 Pandemic

Demands on healthcare resources continue to escalate as our aging population is living longer, often with more long-term health conditions. Changes to current practices are essential to help services keep up with the pressures placed upon them.

Back in 2016, Simon Stevens (NHS England's CEO) urged doctors, nurses and NHS managers to "*grab with both hands*" the growing opportunities technology offers. Both to help promote health and tackle the service's chronic financial problems, by saving on treatment and rehabilitation costs.[1]

In February 2019 the Topol Review[2] was published for the Secretary of State for Health and Social Care on **Preparing the healthcare workforce to deliver the digital future**. In the report it stated that technologies will "*enhance healthcare professionals, giving them more time to care for patients*" and that "*patients will be empowered to participate more fully in their own care.*"

The report details three principles to support the deployment of digital healthcare technologies throughout the NHS:

1. Patients need to be included as partners and informed about health technologies, with a particular focus on vulnerable/marginalised groups to ensure equitable access.

2. The healthcare workforce needs expertise and guidance to evaluate new technologies, using processes grounded in real-world evidence.

3. The gift of time: wherever possible the adoption of new technologies should enable staff to gain more time to care, promoting deeper interaction with patients.

New developments using mobile device App technology have the ability not only to improve the health of patients, but also to save money through rapid optimisation of treatment. They enable early interventions through monitoring before conditions get too serious and reduce the need for routine check-up appointments/procedures. This frees up limited resources in both pathology and the clinic.

Within gastroenterology the BÜHLMANN IB*Doc*® calprotectin patient self-test, fills the digital healthcare requirement perfectly. This App based system enables patients to test their own faecal calprotectin levels at home. The results are transmitted immediately to the clinical team, enabling rapid treatment decisions. With individual customisation available, the IB*Doc* allows ultimate flexibility. It can be tailored to provide results to support clinical decision making in a range of different scenarios, through remote and more frequent patient monitoring, enhancing management without the need for additional resource.

Recently, **Mid and South Essex University Hospital Trust** introduced the use of IB*Doc* across their sites and here the multidisciplinary gastroenterology team, along with some patients, discuss their experience.

Patients as Partners

Initially Dr Pushpakaran Munuswamy (Lead Gastroenterologist at Basildon) gave a talk to the patient support group on digital health and how technology can provide improved personalised healthcare for long term conditions. He says : "*The concept was received very well and a number of the patients expressed an interest in this new technology for monitoring of the disease because they could see the benefits of having patient participation and taking responsibility for their care. We rapidly progressed to an evaluation of IBDoc and contacted about 20 patients to be signed up on the portal and trained on performing the test.*"

Vicky Mundy, a UC patient who participated in the original trial comments: "*When you have a long term condition like IBD you put your whole treatment plan in the hands of other people, but IBDoc brings something back to the patient so that we can be involved and we are helping.*

There are so many patients and so few resources that they are going to have to rethink how things are done – sometimes I have been to clinic to see the consultant but I have been well and ticking along fine so that space could have been used by someone with more urgent need. The opposite has also been true when I have been really poorly and have been desperate to talk to someone for advice. Once the structure is in place hopefully the clinical team will be able to prioritise better, and I think most patients will be receptive to this.

Regarding IBDoc I don't think they could have made the test any easier to be honest – If you have been offered the chance to use then just give it a go. Taking the sample isn't a big deal and the results come through very quickly which is really all that matters."

Stephen Bonnington an IBD patient who also participated in the original trial states: *As somebody who has had Crohn's Disease for 40 years I understand how important self-management of IBD is, and the IBDoc test can play an important part in this. The result can be seen straight away without the inconvenience of having to go to the hospital and then waiting for results to be sent. The importance of this has been particularly highlighted during the COVID-19 situation when many would not want to travel to their hospital.*

Medical staff do need to fully discuss the test with patients to explain the implication of the results and any follow up actions. All the technology is of no benefit if procedures to follow up are not in place; it needs to be a joined-up approach."

Guidance to evaluate new technologies and real world evidence:

Dr Munuswamy explains that implementation is definitely a multidisciplinary team effort. It's important to speak to the clinical team, patients, the laboratory and the POC and innovations teams who are focused on introducing new technologies to improve patient management.

Kezia Allen from Clinical Trials and Informatics at Basildon assisted with the patient evaluations:*"Following a demonstration of the device I took the patients to try it for themselves. This was really interesting as it gave me a chance to see how the patients got on using the devices, observe any difficulties and be there to offer advice if needed. The patients found the app and the devices very easy to use and had few questions (apart from 'how soon can we have these as part of our standard care!').*

During the trial the IB*Doc* results were compared with matched stool testing (same sample or at least the same day sample) in the laboratory. Analysis showed no statistical difference in the results obtained (Spearman correlation was 0.795 and Pearsons correlation coefficient 0.673). Patient acceptance was almost 100%, although they were motivated patients who volunteered for the test. "*This, along with other published evidence, gave us the confidence to proceed,* explains Dr Munuswamy.

Charlotte Williams, Director of Strategy at the Trust, acted as executive champion, helping the clinicians to map out the patient pathway and business case for the IB*Doc* to provide justification for the approval.

The innovation really accelerated when COVID hit due to the impact on high risk populations. IB*Doc* provided the opportunity to offer them a better alternative and avoid the need to come into hospital. A revision of the business case made it high on the impact assessment, not just during the COVID situation, but also with the future outpatient transformation programme. The Chief Finance Officer (CFO) supported the implementation, especially as the outlay was been minimal in terms of additional equipment. The nurses were also committed to the opportunity of it too, so it wasn't difficult to initiate. The services rallied round fairly quickly to make it happen which is really to their credit.

The Clinical Trials and Informatics team continue to support the IB*Doc* implementation as Kezia explains: " *We enrolled in the NEQAS faecal markers of inflammation scheme as the first user in the IBDoc group and have been very pleased with their performance. I hope that other users will enrol in the scheme as they begin using the devices for their patients, so that we get a national picture as we do with the laboratory testing.*"

Implementation

Jacqueline Ruscoe is an IBD nurse specialist at Basildon who told us that originally during the trial the patients came into the clinic to be signed up, shown what to do and given the kits. "*With the advent of COVID this had to change with everything having to be done remotely. Gillian (IBD co-ordinator at Basildon) is signing patients up on the portal and sending them links to the account set up and step by step instructions. She then packages up the kits in a padded envelope and sends them out to the patients. Most patients are coping well with this.*

We have agreed with the consultants that we will focus on the biologics patients first, (although there is the odd patient coming through from outpatients), before we move on to other patient groups. The plan eventually is to get all the patients onto the IBDoc where possible, but there will always be those patients who either don't have the correct phone or can't / don't want to do the test themselves.

We have about 112 patients signed up at the moment, just from Basildon, which is about a third of our biologics patients, and the feedback has been excellent. They have found the kits very easy to use and they really like the fact that they get to see the results and that they don't have to wait weeks for them to come through. It gives the patients a better understanding of how their disease is doing, so they can see if their inflammatory markers are high or under control. This provides real peace of mind which is important. It makes it easier for us too because they don't keep phoning to find out if the results are available (two weeks is a long time if they are worried they are flaring). If a patient thinks something is wrong they can request a kit and find out quickly if they are flaring or not, and they don't have to come into the hospital.

Even the older patients have coped really well and have embraced the new technology – the oldest patient we have on the IBDoc is 75 year old!

If anything, it is some of the younger generation – the late teens that don't seem to do quite so well. From a technology point of view this is surprising, but these patients are transitioning from paediatric to adult care, and so maybe previously their parents have dealt with things, whereas with the IBDoc it is their responsibility."

The Gastroenterology team from Basildon with Dr. Munuswamy (far right) and Jacqueline Ruscoe (centre).

The Gift of Time

Dr Munuswamy concludes: "*From my perspective I am seeing a difference already, because we can escalate treatment within a day or two of requesting the calprotectin test. Previously there was a wait of around 4 – 6 weeks or even longer depending on when the samples is taken and the capacity in the labs. Hopefully, in the future we will see the benefits of this rapid response in terms of reduced hospitalisations and clinic visits because patients have had timely interventions. It will also reduce calls to the helpline because we know the results and have been able to act quickly.*

Personally I think there is also more engagement both with patients and within the clinical team because you are able to follow through on a course of action quickly rather than waiting weeks in between decisions which is more frustrating. The IBDoc is very simple but with a lot of impact on patient care.

There is a move nationally towards more remote monitoring because there is a huge demand for increased capacity, but by relieving some of the resource requirements we can create capacity. So at the moment we are continuing to operate virtual clinics that were introduced during COVID and will do so for the foreseeable future because we see the benefits of this, not only for us but for the patients in not having to attend the hospital (and find a parking space!).

Having more remote monitoring will certainly support that vision of having virtual clinics for those patients that are more stable but we still need to stay in touch with them. The IBDoc gives us the opportunity to monitor the patients and have the ability to intervene very early on if things start to progress so that the patients don't have to keep coming into hospital.

This ties in very much with the Topol Review which highly recommended personalised care for long term conditions and embraces national objectives to adopt digital care. If we can implement this then it will help us to operate more targeted face to face clinics with the patients who have more complex requirements.

It is really satisfying to know you helped introduce a technology that will benefit patients and promote personalised self-care for long term conditions which has been adopted across the Trust. The IBDoc has the potential to transform clinical care pathways, reduce clinical admissions, reduce the need for clinic appointments and save costs by intervening quickly to stop disease progression and the requirement for more costly interventions."

Find out more at www.calprotectin.co.uk/ibdoc

References
1. The Guardian 17th June 2016

2. The Topol Review Feb 2019: Preparing the healthcare workforce to deliver the digital future (https://topol.hee.nhs.uk/)