

## Oxford AHSN case study

Date: Q2 2019/20

Programme / theme: Strategic and Industry Partnerships

Title: Personalised oncology company leverage £199,000 from Innovate UK in partnership with local AHSN

### Overview Summary

Physiomics have developed a proprietary model-aided simulation of tumours, Virtual Tumour™, to help pharmaceutical companies to improve the success rate of drug development. The company want to expand on the utility of this technology by exploring methods of personalising oncology treatments and dosages for patients.



Physiomics have partnered with Oxford AHSN and clinicians at Oxford University Hospitals to further develop this application of the technology. This work

was facilitated by two Innovate UK grants. The first grant (£131,000) was focused on oesophageal cancer, while the second grant was focused on prostate cancer (£68,000). Both grants involved the further development of the Virtual Tumour™ technology to cover the cancers in question, and the Oxford AHSN led a study to determine the feasibility of these applications in the clinical setting.

In the first study, the Oxford AHSN conducted its Lean Assessment Process. The second was a stakeholder engagement study for a personalised dosing app for prostate cancer. In both studies stakeholders were interviewed, results analysed and fed back to Physiomics in order to refine their future product development.

### Challenges

Current treatment guidelines for cancer recommend dosages for patients based on their weight or body surface area, which is then rounded up or down to pre-determined standard doses. These pre-determined dosages aim to be within 6% of a patient's calculated dose. However, the method of calculating these dosages isn't always accurate, which can lead to adverse, sometime severe, effects for the patient or treatment failure, which means another line of treatment needs to be used. NHS England currently spends roughly £1.5 billion on chemotherapy, and with an aging population this figure is set to rise in the future.

Physiomics need help from Oxford AHSN to ascertain whether their technology could help optimise chemotherapy which will lessen adverse effects for patients (and the associated costs) and reduce the likelihood of patients having to have rounds of treatment that don't work, reducing the waste of expensive drugs and staff time.

### **How is the AHSN involved?**

Oxford AHSN conducted two studies to evaluate the acceptability and potential barriers to adoption for the personalised oncology treatment apps developed out of Virtual Tumour™ in the NHS in England. In testing the potential scenarios, the current and proposed pathways were developed, and semi-structured interviews were conducted to explore the potential use and adoption of the apps in the clinical setting, with medical and clinical oncologists in different trusts.

The key objectives of this study were to help determine initial levels of support for the hypothesis that many patients are on sub-optimal chemotherapy regimens. Additionally, Physiomics wanted to understand how clinicians would view the utility of Physiomics' tools, once development been completed and to understand the key drivers and barriers to adoption, allowing for further and more meaningful product development in line with NHS needs.

### **Impacts and outcomes of the AHSN involvement to date**

The partnership between the Oxford AHSN and Physiomics helped the company leverage £199,000 through two Innovate UK grants to help to develop their offerings and test the feasibility of their use in a clinical setting.

The usability feedback given as part of the semi-structured interviews undertaken has enabled Physiomics to develop their offering to draw it more in line with clinical needs, and has given them a good understanding of what clinical evidence would be required in the future to show efficacy and support clinical buy in. This feedback is crucial for early stage ideas to be progressed in a way that makes them more suitable for NHS use.

As part of the feasibility studies, the Oxford AHSN identified the key stakeholders that will need to be engaged in the development of these innovations, helping to ensure that Physiomics create a product that meets their needs, and increases the likelihood of adoption.

### **Learnings to date**

The Oxford AHSN identified the key stakeholders who need to be engaged to take these innovations forward, and their suggestions and feedback will be invaluable in developing these apps further. They will need to be contacted on a iterative basis to continue to help guide product development.

## Supporting quotes

### Innovator

*The Oxford AHSN have provided us with feedback from medical oncologists and have been a gateway into the NHS. Market access has been paramount in the adoption of the personalised dosing app and has enabled us to speak to clinicians we otherwise would not have had access to.*

**Jim Millen, Chief Executive Officer, Physiomics**

### AHSN

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**Mamta Bajre, Lead Methodologist, Oxford AHSN**

## Plans and timescales for spread and adoption

Physiomics are currently re-evaluating these projects and looking at future development pathways. No timescales have been set against this development stage. Going forward, they are looking to partner with NHS Trusts to gain data to test their models further.

## Start and end dates

The stakeholder engagement ran from February 2019 to April 2019.

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