



## Oxford AHSN case study

Date: Q1 2019/20

### Programme / theme: Strategic and Industry Partnerships

**Title:** Healthcare tech company's expansion and Stock Exchange listing enabled by Oxford AHSN expertise

#### Overview Summary

The Oxford-based firm Sensyne Health (formerly Drayson Health) uses artificial intelligence (AI) to develop medicines and aims to improve patient care through the analysis and commercialisation of real-world evidence from large databases of anonymised patient data in collaboration with NHS Trusts.



In-depth support from the Oxford AHSN was instrumental in helping Sensyne develop and licence three products including GDm-Health, a remote monitoring system for women who develop diabetes during pregnancy. Oxford AHSN support included providing pilot data, writing a business plan, fine-tuning the product and establishing proof of concept by enabling expanded real-world testing from a single hospital site to hundreds of patients across four NHS trusts.

Enabled by the Oxford AHSN, the business headed by Lord (Paul) Drayson, signed a five-year strategic research agreement in July 2017 with the University of Oxford and the Oxford University Hospitals NHS Foundation Trust. The collaboration creates a pathway for the commercial development of digital health innovations invented and clinically validated by the University and the Trust, and invests £5m back into patient care and research via a shared equity and royalties agreement with the University of Oxford and the Oxford University Hospitals NHS Foundation Trust. Similar agreements have followed with other NHS trusts.

The Oxford AHSN provided support – including helping to develop the commercial strategy and presenting at investor roadshows – in the run-up to and during Sensyne Health's stock market debut in August 2018 which raised £60m. This funding is supporting the company's expansion with 45 new jobs created by June 2019.

Sensyne Health was one of the 30 companies featured in the AHSN Network Innovator Zone at the Health and Care Innovation Expo 2018 in Manchester, September 2018. Sensyne's digital health product GDm-Health was featured on the BBC Radio 4 Today programme ahead of Health Secretary Matt Hancock's keynote address at Expo on harnessing technology as an example of digital technology that should be spread and adopted more widely in the NHS.

#### How is the AHSN involved?



Three digital health products - SEND, GDm-Health and EDGE-COPD - which emerged from Oxford University's Institute of Biomedical Engineering were licensed exclusively to Drayson Health (now Sensyne Health) in February 2017.

This was achieved following wide-ranging and in-depth expert input from the Oxford AHSN which included:

- providing pilot data
- writing a business plan
- fine-tuning the product
- establishing proof of concept by enabling expanded real-world testing from a single hospital site to hundreds of patients across four NHS trusts.

The Oxford AHSN connected the product developers with Sensyne Health, leading to these digital health products being licensed to the company and paving the way for spread and commercialisation. This is leading to improved care with millions invested back into the NHS and research establishments where the concepts were originally developed.

The Oxford AHSN provided support – including helping to develop the commercial strategy and presenting at investor roadshows – in the run-up to and during Sensyne Health's stock market debut in August 2018 which raised £60m including taking part in investor roadshows. This funding is supporting the company's expansion with 45 new jobs created by June 2019. Following this input the Oxford AHSN received a letter of endorsement from Sensyne.

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

Financial impact:

- Up to 45 jobs will be created by June 2019
- £5m invested back into patient care and research
- £60m raised through Stock Market debut in 2018

More detail on the GDM-Health digital health product:

Gestational diabetes mellitus (GDM) affects 5%-16% of all pregnancies in the UK and can lead to complications for the mother and baby if blood glucose is not tightly controlled. Women require hospital visits every 1-2 weeks. The cost and burden of GDM for both the NHS and the patient are high. GDm-Health has been extensively evaluated and is associated with fewer pre-term births, less reliance on medication, a significant reduction in caesarean sections (27 per cent compared with 46 per cent for those keeping traditional paper diaries), high patient satisfaction, better compliance with blood glucose monitoring, fewer clinic visits and more efficient use of staff time.

*"Previously we would receive an email from the patient, then précis their readings, record those readings manually on paper records and then respond by email to the patient with medication/dose recommendations. This was laborious and allowed for transcribing errors. Oxford AHSN adapted the database to our needs so we collect additional info on each patient at delivery and download it at the end of the year for audit purposes. This now takes approximately one day instead of six weeks. We*



*would find it almost impossible to manage without the system now.” – Rachel Crowley, Diabetes specialist midwife, Royal Berkshire Hospital, Reading (evaluation site)*

Other possible impacts:

Sensyne Health was one of the 30 companies featured in the AHSN Network Innovator Zone at the Health and Care Innovation Expo 2018 in Manchester, September 2018. GDm-Health was featured on the BBC Radio 4 Today programme during Expo as an example of digital technology that should be spread and adopted more widely in the NHS ahead of Health Secretary Matt Hancock’s keynote address at Expo on harnessing technology.

The GDm-Health system won the Best Digital Initiative award in the Quality in Care Diabetes Award 2014.

### **Supporting quotes**

#### **Innovator**

Lord Paul Drayson, Chairman and CEO of Sensyne Health said: “*Chronic disease affects the lives of millions of people as well as accounting for around 70% of NHS costs. Digital health technologies offer the potential to make a huge difference for these people and save money for the NHS. This highly innovative partnership will ensure that there is a pathway from invention to commercialisation for digital health products created in Oxford that will deliver benefits to patients and reinvestment back into the University and the NHS Trust.*”

#### **AHSN**

Julie Hart, Director of Strategic and Industry Partnerships said: “*Digital health has enormous potential to generate patient benefit and economic savings throughout the NHS. In Sensyne Health we have found a partner committed to commercialising these ground-breaking technologies that could have a significant impact on patients around the UK.*”

#### **Service user**

Katy Bartlett, Lead Diabetic Midwife, John Radcliffe Hospital said: “*The success of this project has exceeded our expectations which is fantastic*”.

Vanessa Galli-Wara, of Calvert, near Buckingham, was diagnosed with gestational diabetes towards the end of her first pregnancy. She used the new device to monitor her blood sugar levels and pass on comments to the team at the John Radcliffe. Vanessa made adjustments to her diet based on regular feedback from diabetes specialist midwife Katy Bartlett. Vanessa’s daughter Harriet Poppy was born fit and well on 11th November 2014. “*It was handy to know that I was in constant touch with somebody and that I would get a message if there was something to worry about. We live about an hour away so having fewer appointments as a result of using this kit helped a lot.*”

### **Plans and timescales for spread and adoption**



The John Radcliffe Hospital, Oxford, has implemented GDm-Health. Other sites went live in 2018/19 including the Royal Berkshire (Reading), Croydon, Milton Keynes, Buckinghamshire Healthcare and Guy's, St George's and King's (London). Oxford AHSN will measure the health economic impact of the implementation at the sites in its region and create a budget impact model to facilitate wider adoption and spread.

### **Start and end dates**

The relationship started in 2014 as an Oxford AHSN Clinical Innovation Adoption project and progressed into a strategic partnership during 2017. During 2018, with increased capacity and capability at the Oxford AHSN, the partnership continued to grow and strengthen.

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