

DetectED-X Marks the Spot...

Zoë Callister-Hakewill

Abstract: DetectED-X, a Sydney-based medical imaging start-up, has developed an online learning platform to improve the clinical diagnosis and treatment of breast cancer. The company today is an international leader in medical imaging education, training, and assessment.

Keywords: DetectED-X, 3D printing, quality assurance

1. The success story—DetectED-X

Breast cancer is one of the leading causes of death in females worldwide. Early diagnosis and treatment are primarily associated with good prognosis and improved long-term remissions. Some of the key challenges in breast cancer screening are not rooted in the lack of technological advancement for detecting breast cancers but in the healthcare system's operational overload. The online learning platform engineered by DetectED-X, *Rivelato*, has been developed to provide uniformity in radiological training and optimised to facilitate clinical decision making. In the last year, DetectED-X has been embraced by the international community (validated in Australia, New Zealand, Asia, Middle East, US, and Europe) for its evidence-based approach for improving the clinical diagnosis of breast cancer.

2. Where did it start and the motivation?

Collaborating on DetectED-X, Dr Suleiman, Professor Brennan, and Professor Rickard combined their specialist skills to develop a novel educational approach after identifying two key challenges in breast cancer screening. First, it was observed that radiologists reading for breast cancer screening encounter a relatively low number of cancer cases. This was attributed to the low prevalence of breast cancer. Second, radiologists have varying clinical experience, which means that they tend to approach breast cancer detection differently and often do not receive timely feedback.



Figure 1. Photograph of Professor Patrick Brennan (CEO, Co-Founder) and Dr Moe Suleiman (CTO, Co-Founder) at RSNA 2019, USA launch.

3. The journey so far

The initial research platform relied on grant funding and was limited to Australian radiologists. In 2019, the platform was widely adopted in Australia, giving the team enough support to commercialise its product and aim for international expansion. DetectED-X ultimately aims to create a paradigm shift in cancer detection globally, especially in developing countries, where this type of education is lacking.

DetectED-X joined the INCUBATE program in 2019, transforming its platform into a legitimate business venture. *“[INCUBATE] guided us through the process step by step, everything we needed to know was answered by experts and entrepreneurs who have gone through the process and were very successful,”* says Dr Suleiman, *“I think that the support that INCUBATE provides to start-ups is essential and life-changing”*.

Since mid-2019, DetectED-X has seen widespread international adoption. Highlights include CPD point accreditation in both Australia and New Zealand, in addition to CME point accreditation within the US. DetectED-X has also secured contracts with the Department of Health in New Zealand and Slovenia. The company is currently in advanced discussions with multiple hospitals and imaging clinics throughout the US. In addition, the team is also in the process of finalising a distribution agreement with an international vendor for imaging software.

When the World Health Organisation called for solidarity in the global response to the COVID-19 pandemic, the DetectED-x team quickly adapted their platform to help educate clinicians to identify the appearances of COVID-19 on CT scans, *“we made it available free of charge to all clinicians around the world, CovED was truly a multi-national multi-disciplinary consortium of collaboration in the face of a global pandemic.”*



Figure 2. Photograph of CovED software platform - CovED is a browser-based application, allowing clinicians to improve detection performance remotely from a Mac or PC. Clinicians have access to a database of lung CT scans which may be used as a training tool to accurately diagnose cases faster COVID-19 cases more rapidly.

4. Look into the future

Despite much success, Dr Suleiman laments on the challenges of balancing family life and getting a small start-up off the ground *“it was time-consuming learning and trying to work out the ins and outs of the business. Some days I worked around the clock with little sleep”*. Hurdles faced along the way, including *“navigating IP issues took some time, trying to convert interest into paying customers as well as securing customers instead of research collaborations,”* became pivotal points for re-engagement with the company’s purpose of improving patient outcomes. With many accomplishments to date, the future looks bright for DetectED-X; the company is rapidly becoming recognised as an innovative international leader in medical imaging education, training, assessment, and research. Dr Suleiman remains humble but optimistic about the future, *“I think success is an elusive term we always aim for more”*.

The Company



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References

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In 2015, **Zoë Callister-Hakewill** joined Dr's On Call, a mobile medical outreach service which has been operating in greater Sydney for the past 20 years. As Chief Health Officer, Zoë oversees the implementation of legal and ethical telehealth policies to ensure the successful delivery of quality clinical care in a new, COVID-19 friendly, digital format. Her responsibilities include guiding clinical team decision-making that aligns with best practice in the digital health space, business development with various stakeholders to address the primary health care and palliative needs of the disabled and elderly, raising awareness, and reducing stigmatisation for the mentally ill, providing auxiliary services to the homeless and mobilising support for victims of abuse.



Zoë has cultivated a wide base of skills through her extensive tertiary studies, in the fields of public health, health law and ethics, allowing her to facilitate the transformation of a paper-based medical practice, into a leading digital healthcare platform and under her guidance, Dr's On Call has seen a considerable uptake in its services amongst its clients, particularly in residential aged-care facilities whom otherwise may not have access to quality healthcare in a COVID-19 safe manner.

Zoë is a graduate of the University of Sydney where she holds a Bachelor of Medical Science, a Masters of International Public Health, and a Masters of Health Law. She is currently finishing a Bachelor of Psychology (Honours) at Macquarie University. She is employed as a Research Officer in the Department of Cognitive Science, where she is part of a research group, which employs the use of commercial mobile EEG technology to investigate brain health.

Zoë is passionate about remaining committed to community outreach and continuing to employ biotechnology to improve future health outcomes for all.