

Ambient clinical intelligence, Healthcare AI

Ambient Clinical Intelligence (ACI) and the clinic room of the future

[Dr. Simon Wallace](#) | Chief Clinical Information Officer (CCIO), Nuance Healthcare UK and Ireland

2 August 2019



Nuance is aiming to bring eye-contact and warmth back to the consultation room, improving patient experience and decreasing the threat of physician burnout. Ambient clinical intelligence (ACI) will mean doctors are no longer required to be hunched over a desktop computer in the room.

How AI is meeting the needs of patients and clinicians

For decades now doctors have been turning away from their patients consumed by their computer screen and the need to search for and enter key clinical knowledge as they capture the record of the patient encounter.

Now Nuance's AI powered speech technologies, supported by deep learning and advances in AI, are helping the doctor to turn the chair back around and engage better with the patient.

Meet ambient clinical intelligence (ACI)

At Nuance, AI is now powering what we call [ambient clinical intelligence \(ACI\)](#). ACI listens to clinician – patient conversations securely, through a purpose-built healthcare device with a multi microphone array. As the consultation conversation takes place it is automatically entered into the EHR as a clinical note. This is displayed within the clinical documentation on a desktop, iPad, mobile app or TV monitor. ACI assists the clinician in capturing the patient encounter and providing assisted workflows, task and knowledge automation directly into the EHR.

ACI captures the patient's response as well as that of the clinician. It uses voice biometrics to identify and distinguish between the human speakers. Key clinical facts, including problems and orders, are automatically extracted as coded information so that the clinician physician can verbally accept them and complete documentation. This further reduces the administration burden on the clinician.

Clinical documentation is then automatically sent to the secure cloud, making highly accurate medical records available to all users on all devices—whenever and wherever it's most convenient.

Collaborative conversations.

Nuance hopes to advance the ACI tool to the point where machine vision technology can help understand and resolve non-verbal cues and automatically gather telemetry data, such as body measurements. As ACI advances in sophistication, increasingly capable virtual assistants that can engage the care team in collaborative conversations can be introduced.

In this fully automated experience, proactive virtual assistants will engage everywhere—with the care team and across assisted workflows—brought together with ambient-sensing hardware to automate workflows and deliver clinical documentation that writes itself. It is imagined that patients, involved in uninterrupted conversations with their clinician, will feel more engaged.

ACI will help alleviate the burnout care teams experience from the extra time formerly spent documenting visits, navigating patient electronic records, and following up on documentation details.

Tags: [Future of Healthcare](#), [Dragon Ambient eXperience](#)



About Dr. Simon Wallace

Dr. Simon Wallace is the Chief Clinical Information Officer (CCIO) of Nuance's Healthcare division in the UK and Ireland. Simon has worked as a GP, hospital and public health doctor in Brighton and London. His interest in health informatics began in the 90s when he spent a year at the King's Fund investigating the impact of the internet on shared decision making between patients and their healthcare professional. For the past 15 years, he has worked for a range of organisations including Bupa, Dr Foster, Cerner Corporation and GSK across a range of technologies which include electronic patient records, telemedicine, mobile health and lifestyle devices. Simon has a keen interest in the voluntary sector, recently completing a 7 year term as a Trustee for Fitzrovia Youth in Action, a children and young people's charity based in London.



[View all posts by Dr. Simon Wallace](#)