

# Editorial

## Rise of the Machines: Audiology and Mobile Devices

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Over the past few decades, advances in mobile device technology have enabled many of the core audiology tests to be delivered through smart phones or tablet computers. The integration of mobile computing devices into the healthcare environment has resulted in an innovative shift in where and how audiology services can be delivered. The backbone of audiology is, of course, the pure-tone audiogram and speech-recognition testing. Since the 1920s, audiometers used for the diagnostic audiometric evaluation have been largely anchored in audiology clinics where they are utilized in sound attenuated booths. For the purposes of audiometric assessment, there are now a number of companies and research facilities that have developed and marketed software applications built on mobile device platforms. These apps coupled with new headphone technology that allows calibration and sound-attenuation equivalent to a traditional sound-booth are now being used to change traditional audiology practice. What is at question is how do these new forms of technology capable of performing audiometry compare to conventional audiometric testing done in booth and with a traditional audiometer.

In this issue of *JAAA*, Bornman and colleagues report on the test-retest reliability of extended high frequency (8–12 KhZ) audiometry using a smartphone application. This capability is especially useful for

patients being monitored for ototoxicity. Patients undergoing chemotherapy or those being treated with intravenous antibiotics are, in most instances, being seen by multiple specialists to treat their condition. In many instances, patients will have an appointment coordinator to arrange all of their appointments as close together as they can so they can spend as little time in the hospital as possible. The ability to provide hearing monitoring without having to transport the patient to a different department lessens the burden on this fragile population. The investigators report that there was no significant difference between their smartphone application and headphone system when compared to conventional high frequency audiometry. This is encouraging news not only for those patients that are being treated with ototoxic medications but also for those individuals who work in areas with high noise levels. This exciting technology also has promise for monitoring hearing in occupational settings. There is no question that mobile device testing is here and it is reliable. What remains is how to leverage this technology to first, improve our profession's ability to identify those who need our services and second, provide accurate and sensitive monitoring of hearing.

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