Thanks to the advent of deep learning/artificial intelligence (DL/AI) technologies, the interdisciplinary area of ICT (Information and Communication Technologies) and medical applications has found and developed many useful and effective applications, opening a new era in medical care and disease diagnosis. Medical big data enables the applications of newly developed ICT technologies to the medical areas, which are becoming more and more popular. This talk introduces the recent research results of the Ultra-small-sized Diagnostic Smart Devices (uDSD) research center, a research institute of a group of experts from universities, hospitals and companies. The center investigates ICT technologies for medical applications such as chip designs for medical applications, mobile platform-based intelligent diagnosis, medical DL/AI, big data analysis, and medical imaging. The recent joint efforts of academic research with hospitals and companies at the center have produced substantial improvements in jaundice diagnose using smart phones, smart capsule endoscope, DL-based mammography, and cardiac disease. In addition, the future vision of uDSD center to promote and contribute mobile platform-based telemedicine will be also addressed.