Patient Monitoring Without a Doctors' Touch

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In June I mentioned a promising new sensor technology that can be used for non-invasive measurement of muscle movements with potential applications in patent monitoring (ECG, EMG, to name a few). The technology comes from a partnership between the University of Sussex and Plessey Semiconductors, which will be bringing its PS25150 ECG sensor to market in the near future. Its ability to sense these fields through solid objects make it especially attractive for contactless measurement in first response applications.

Also this spring, an advance was made in another, more established sensor technology which can detect movements through solid objects, like walls, for use in patient monitoring. According to ScienceDaily (April 29, 2011, http://www.sciencedaily.com/releases/2011/04/110428070243.htm [1]), researchers at Tyndall National Institute, UCC, Cork have integrated – for the first time – ultra wideband pulse radar onto a single micro chip. The article goes on to explain, "the radar sends very short pulses towards the chest and detects the echo reflected in proximity of the skin. The output signal provided by the sensor is therefore sensitive to the chest movement." The development of such a chip could pave the way for easier integration into medical devices that could provide contactless measurement of respiratory conditions, even SIDS.

We are already seeing the doctor-patient relationship transcend the traditional office visit via advances in telehealth. Add to that these two breakthroughs in contactless patient monitoring – one for muscular activity and the other for respiratory monitoring, respectively, along with WiFi enabled medical devices, an ever expanding range of medical conditions can be diagnosed instantly while producing an even greater volume of associated data. This begs the question as to whether our methods of healthcare delivery and treatment will be able to keep up.

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