

Stabile, Natasha BSc, BEng; Reynolds, Karen J. PhD **Functional Evaluation of Pulse Oximeter Simulators**. *Journal of Clinical Engineering*. 28(3):174-182, July/August/September 2003.

Functional Evaluation of Pulse Oximeter Simulators [Article]

Stabile, Natasha BSc, BEng; Reynolds, Karen J. PhD

Institution

From the School of Informatics and Engineering, Flinders University, Adelaide, South Australia, Australia (Dr Reynolds and Ms **Stabile**); and the Biomedical Engineering Department, Flinders Medical Centre, Bedford Park, South Australia (Ms **Stabile**).

Abstract

In an attempt to produce an accurate and reliable pulse oximeter testing device, a number of manufacturers have produced pulse oximeter simulators that are based on both electrical and optical designs and techniques. The functionality of three such simulators was evaluated using eight different pulse oximeters over an oxygen saturation range of 60% to 100% and a heart rate range of 50 to 250 bpm. Simulated saturation, heart rate, and pulse amplitude levels were manually set and progressively decremented and the corresponding oximeter readings were recorded. The majority of results obtained were found to be within the specified accuracy; however, some notable discrepancies were recorded.

Accession Number

00004669-200307000-00027