Using The HESS Pulse Ox App

Healthcare Education Simulation Station

Revised 7/1/2025

www.BetterNurseEducation.com

PLEASE READ

DISCLAIMER

The information in the HESS is not intended or implied to be a substitute for professional medical expertise, advice, diagnosis or treatment.

There is no representation and no responsibility for the accuracy of information contained within the HESS.

The HESS is only intended to be used as an instructional aide by qualified medical educational professionals.

About The HESS Pulse Ox App

The HESS Pulse Ox App was created to let healthcare professionals conduct learning exercises that involve a hand held Pulse Ox device in a safe and “low stakes” environment.

The Pulse Ox App can be used to simulate Pulse Oximetry vitals on both Manikins and Standardized Patients (actors) where a real Pulse Ox would either display the healthy vitals of the Standardized Patient or read no vitals from an artificial Manikin limb.

Tablets Suitable To Run The HESS Pulse Ox App

The HESS Pulse Ox App can run on Android tablets with Version 8 or above of the Android operating system and with a screen size of approximately 7 inches. The 7 inch screen size is a common Android tablet size that can allow the tablet to still be hand held.

Android tablets with screen sizes smaller than 7 inches may not display the Pulse Ox App screen elements correctly.

The Pulse Ox App can be run on larger screen sizes if the educational exercise dictates using a larger tablet – such as displaying the Pulse Ox App screen on a monitor or projector.

HESS Vitals Accepted By The HESS Pulse Ox App

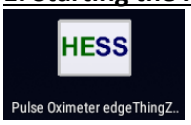
The HESS Pulse Ox App will recognize and use the following vitals transmitted from the HESS Instructor tablet.

1. Pulse Oximetry Vitals

The Pulse Oximetry Vitals that the Pulse Ox App recognizes and uses are the Pulse Rate (BPM), Pulse Arrhythmia Type, Pulse Arrhythmia Rate and SPO2 (%).

Using The HESS Pulse Ox App

1. Starting the Pulse Ox App



The HESS Pulse Ox App can be started by touching the HESS Pulse Oximeter App icon on the Android tablet.

2. Starting the Pulse Ox Vitals Display

AFTER the Pulse Oximetry Vitals have been transmitted successfully from the HESS Instructor App, the "power" button can be used to start and stop the Pulse Ox Vitals display.

HESS Pulse Ox App Settings

The HESS Pulse Ox App has the following Settings available via the Android “3 dots menu” in the upper right corner of the Pulse Ox App screen:

1. Pulse Rate Low And High Alarms

Sets values, that if the Pulse Rate (BPM) falls below or rises above, will trigger the Pulse Ox App to sound an audible alarm.

2. SPO2 Low And High Alarms

Sets values, that if the SPO2 (%) falls below or rises above, will trigger the Pulse Ox App to sound an audible alarm.

3. Device Address

The Pulse Ox App receiving address for the Vitals – which must match the transmission address for the Vitals in the HESS Instructor App. Device Addresses are 4 characters made up of the characters 0-9 and A-F. **DO NOT USE** “0000” or “FFFF” as Device Addresses. “0000” and “FFFF” have special uses within the HESS. Using these special Device Addresses can cause unpredictable results.

HESS Pulse Ox App Usage Notes

1. Bluetooth Reset Button

If, after numerous attempts, the Pulse Ox App is still not receiving Vitals transmissions – even though the Instructor transmission and the Device receiving addresses match – the "Bluetooth Reset" button in the upper right corner of the screen can be used to reset the Android tablet's Bluetooth functions. This often will resolve Bluetooth oriented issues without having to stop or disrupt the app.

2. Issues When Using Very Low Heart Rates

The Pulse Ox App is "driven" by a simulated cardiac cycle. The Pulse Ox App will finish any currently established cardiac cycle before moving to new Vitals values even if the new Vitals transmissions have been successfully received. In cases of very low heart rates – such as 10 BPM or lower – it can take some time before changes appear. As an example, in an extreme case of a heart rate set to 1 BPM, the cardiac cycle would be 60 seconds in duration and it could take 1-2 minutes for changes transmitted to take effect. This can make the app appear unresponsive even though it is working properly.

3. When Done, "Power Off" Tablets – Don't Just "Suspend" Them

The Android tablets should be completely "powered off" when stored or the battery will drain to 0% charge. Completely drained batteries can then take 20-30 minutes of charging just to get the tablet to power up for usage. Even if the tablet screen is dark it can be misleading because the tablet may only be "suspended". Pressing the power button for ½ second will indicate if the tablet is completely powered off – by either "unsuspending" the tablet screen if the tablet is only "suspended" – or remaining dark if the tablet is completely powered off.