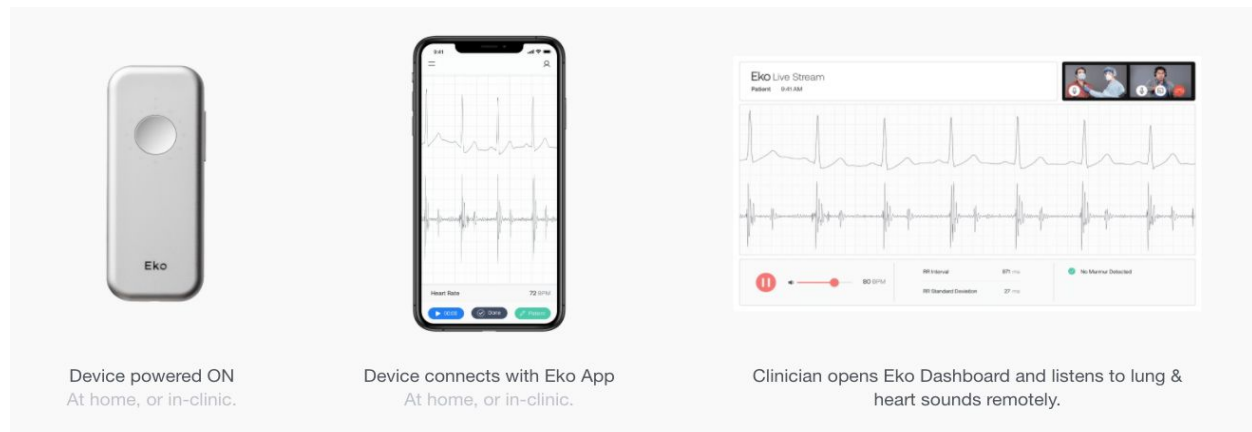


# Eko

## Virtual Bedside Teaching with Eko



## Summary

### The Problem

The COVID-19 pandemic poses significant challenges to medical education as recent guidelines discourage medical students from being involved in direct patient care activities. Traditionally, medical education provides first-hand learning experience for students through clinical placements and patient rounds supervised by physicians. Teaching by the bedside has long been an effective method for providing experience with patient care and developing competence in clinical skills. However, this style of teaching has completely eroded due to global safety precautions. Virtual Bedside Teaching (VBT) with Eko mitigates the risk and transmission of infection for both clinicians and patients while safely providing students exposure to real patients and clinical findings associated with different medical conditions.

**The Solution** This protocol describes how academic institutions and health systems can use Eko livestream technology and stethoscopes to support virtual bedside teaching.

## I. Equipment

### 1. 1 **Eko CORE** stethoscope

An FDA-approved digital stethoscope. Features active noise cancellation, 40x volume amplification, digital filters, and bluetooth connectivity.

OR

### 1 **Eko DUO** stethoscope

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An FDA-approved digital stethoscope with single-lead ECG sensor. Features 60x volume amplification, digital filters, and bluetooth connectivity.

2. **A smartphone device**
3. **Eko telehealth application** which can be downloaded on iOS, Android, and Windows
4. **A tablet** (iOS or Android) device with Cellular or Wifi
5. **A tablet stand** that is medical grade (such as [Tryten](#))
6. **Video conferencing application** that is HIPAA-compliant (such as [Zoom for Healthcare](#))
7. **Stethoscope covers** for Eko CORE (such as [Aseptiscope](#)) or for Eko DUO (such as [Sheathes](#))



## II. Physicians and Faculty

1. Identify a case to present. This can be done in conjunction with a student who is currently rotating at your site. It should ideally be a case that is representative of a common medical condition that a student would be expected to learn to manage (e.g. Decompensated heart failure, cellulitis, liver disease, pneumonia, etc.)
2. Obtain consent for video recording from the patient.
3. Ensure that the Eko stethoscope is paired to the Eko app on the tablet. This is done via Bluetooth and should be automatic when the Eko stethoscope is in the “on” position. Also ensure that the app has livestream turned on. Turn off the Eko stethoscope until ready for use.
4. About 15 min prior to the session, begin the Zoom session.

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5. Situate yourself in a quiet area outside of the nurses' station. Once students arrive to the Zoom, introduce yourself and review the following ground rules (5 minutes)
6. Questions/comments should be submitted via the "chat" function in zoom; the chat monitor will relay these comments or questions ( appoint a person to be the chat monitor)
7. Preview the case outside the room and provide the medical record number of the patient so that students can follow along in the chart. Highlight important historical points or physical exam findings you wish to elicit during the encounter. (10 minutes)
8. Proceed to the room and perform a focused history and physical exam. Turn on the Eko stethoscope and instruct the students to click on the Eko livestream link when you are ready to auscultate. Mute your own audio while you auscultate so that the students can increase their volume for auscultation. (30 minutes)
9. If Livestream is not available, an alternative is to pre-record the patient's findings using the Eko stethoscope recording function, and to direct students to the Eko dashboard where they can listen to the recording while you are doing the exam
10. Leave the room, return to a quiet space and debrief the encounter. You can choose to share your screen with the students to review radiology, labs, or use the whiteboard function to review additional clinical pearls with the students (15-20 minutes)

## III. Students and Residents

1. Prior to the session, you will receive an email from the administrator with a calendar invite to the Zoom session as well as a link to the Eko stethoscope livestream. This link will allow you to hear what the preceptor is hearing through the stethoscope in real time. For maximum performance, you will need **high-quality headphones** connected to your computer or tablet device to hear the sounds.
2. The session should last about an hour. A recording of the session will be available after completion. The general rules of the sessions are as follows:
  - a. All participants should be muted unless granted permission to speak by the chat moderator
  - b. Questions/comments should be submitted via the "chat" function in zoom; the chat monitor will relay these comments or questions
  - c. The administrator or another faculty member will serve as the chat monitor