Teaching Auscultation With A Bluetooth Connected Stethoscope

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Learning Objectives

- Discuss features of a Bluetooth connected Stethoscope
- Evaluate the utility of a Bluetooth connected stethoscope in nursing education

Disclosure

- There is no sponsorship or commercial support provided for this presentation.
- Commercial product names mentioned are not for endorsement of any specific product, but to provide the actual method and mechanism for the use of a Bluetooth connected stethoscope
What The Research Says .......

- Healthy heart sounds versus cardiac murmurs
- Real-time instructor feedback and diagnostic proficiency
- High student to patient ratio and the difficulty of simultaneous listening
- The ability to learn from recordings of heart and lung sounds
The Old Way

The New Way
Stethoscope Features

- Usual tubing and ear pieces
- Normal diaphragm and bell
- Electronics between the tubing and the bell
- Features on the stethoscope
  - Volume control
  - On/off for BlueTooth connectivity
- When not “on”, can use like any stethoscope
Stethoscope Features

• BlueTooth connectivity to mobile device (iOS/Android)
• Secure sign-on to app
• Record heart and lung sounds
• Visual waveforms of sounds
• Live stream to a second device
  • Remote location
  • Connect via email/send a URL
Dashboard

Unnamed: Cardiac 1a

Edit Profile

Recordings  Sharing  Activity

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DATE
Jan 22, 2017 - 6:25 AM

LOCATION
None

RECORDING BY
Digger

AUDIOL

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Notes
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Current Approaches and Challenges

- Students and faculty use a double-headed stethoscope.
- Close physical proximity between the student, the faculty, and the patient.
- Must be with each student to hear what they are hearing.
Implementing Bluetooth Stethoscope

- First year, second semester ADN students
- Small groups of students and an instructor (6:1)
- A stethoscope and iPod touch per student
- Review for both faculty and students on using the stethoscope
- Deployment of stethoscopes in clinical area

*FDA and HIPAA
Student and Faculty Experiences

**STUDENTS**

- Excited to use stethoscopes
- Initiated patient teaching skill (use of play-back)
- Stethoscopes felt heavy
- Own mobile device

**FACULTY**

- Logistics of stethoscopes
- Arrangements at facility
- Time needed for change/adaptation
- Support of clinical instructors
Changing Student Skills

• Accuracy of interpretation of both heart and lung sounds improved

• Better able to distinguish when extra or missing systoles were present in heart sounds

• Greater accuracy in identification of adventitious sounds
References


