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This issue

diacoustic MEDICAL DEVICES (PTY) LTD

Official Newsletter

Something about the Electronic Stethoscope

Acoustic stethoscopes have particularly low sound levels and thus came the creation of the Electronic Stethoscope. An electronic stethoscope overcomes the low sound levels by electronically amplifying body sounds. Electronic stethoscopes require conversion of acoustic sound waves to electrical signals which can then be amplified and processed for optimal listening. Unlike acoustic stethoscopes, which are all based on the same physics, transducers in electronic stethoscopes vary widely.

Because the sounds are transmitted electronically, an electronic stethoscope can be a wireless device, a recording device, and can provide noise reduction, signal enhancement, and both visual and audio output.

Clinicians will automatically recognize an "electronic" quality to even the best sounds obtained from the electronic stethoscopes currently on the market. Utilizing electronic stethoscopes for auscultation definitely takes getting used to, but with repeated exposure any practitioner can learn to appreciate the sound obtained with an electronic stethoscope.

Distinguishing between Pathological/Physiological. Is it a guessing game?

The art of establishing whether a heart murmur is either pathological or physiological is as good as a guessing game according to doctors that took part in our Sensi competition across the country.

During Sensi's travels in Cape Town, Bloemfontein and Pretoria; 311 doctors, students and academics took part in our exciting competition that stood them a chance to win a WelchAllyn Master Elite Electronic Stethoscope. Participants had to listen to two hearts sounds played to them through a computer and was then asked to establish whether the heart sounds were pathological or physiological.

The results of the competition were tallied from each location and the average answers from all participants were proven to be the same as flipping a coin as 50% of participants were correct and 50% incorrect. This shows that by chance a guess can be correct. Does this mean that medical examiners should take out a coin every time they sit with a difficult cardiac diagnosis? Even though results do prove that perhaps flipping a coin would be the best alternative in establishing normal from abnormal, but of course this would not be the best practical method in exactly earning patient trust.

Our small study did prove interestingly enough but not as a surprise that Sensi should become a commodity to medical examiners. Why play the guessing game when you can get a second opinion right on the spot without a lot of effort? If you think about it, rugby referees do it all the time. They don't flip a coin or guess whether a try needs to be given, they turn to their technical support to make a final decision.

In medical terms heart auscultation can be complex at times when hearing a heart murmur and sometimes it will be beneficial to have a second opinion at hand rather than taking a simple guess. Our advice from Diacoustic is to call the guessing game quits and leave the coins in your pocket where they belong and rather go for the more professional outcome.

Sensi making News:

- See Sensi in Medical Chronicle September Issue
- Sensi making News in Engineering News. Follow this Link to read all about it. http://www.engineeringnews.co.za/article/computer-aided-heart-disease-detection-device-developed-in-sa-2011-09-02
- Diacoustic on a national radio channel: Radio Sonder Grense (RSG)
- Sensi welcomes our Bloemfontein distributors, Nostics, and our Africa distributors, Telemedicine Africa, to the team. We look forward to working with you.
- Sensi exhibited at the Medical Research Council annual Conference as well as the SAMA annual conference during September.

Saving money, Saving time

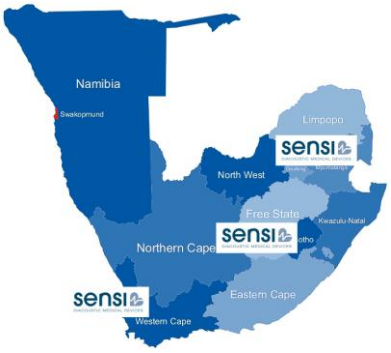
The Diacoustic team is in an on-going process of evaluating the cost-benefits of Sensi. This month we show you how a single paediatrician can save medical funds more than R40, 000/year in the private sector.

A paediatrician in the Western Cape is using Sensi on about ten patients per month (every time he hears a suspected murmur). In the last month he identified, with the help of Sensi, three pathological cases and referred these patients to a paediatric cardiologist who confirmed the diagnosis. A 36 month child had Fallot's Tetralogy which had not been detected previously. In the past the paediatrician would have referred an additional three (normal) patients due to uncertainty and anxiety by the parents.

The average cost for visiting a paediatric cardiologist is about R1, 200 in the private sector (this will include an echo-cardiographic scan).

The above analysis shows that a single paediatrician can save healthcare financers more than R40, 000 a year on unnecessary referrals by obtaining an accurate second opinion (12x3xR1200 = R43, 200). This is only the direct cost. The once off cost of the second opinion (Sensi) is R12, 990!!

Sensi travels the Country



Sensi has been a real jet-setter this month and demonstrated the device at the University of Stellenbosch medical campus at Tygerberg, followed by the University of Bloemfontein as well as the University of Pretoria. These demonstrations were to inform students and other academics about Sensi and the advantages that it has for their future careers. This in turn brought a great hype to the electronic stethoscopes.

During Sensi's travel a few quotes were picked up from the people that were encountered. One of the most interesting ones was from a professor at the University of Pretoria who instructed his students to use their stethoscopes:

"Please take out your guessing tubes "

Cipla and Sensi screens for Congenital Heart Defects at School

"I Love my Heart" was the message for pupils at the Noord-Eind Primary School in Paarl as Cipla and Diacoustic joined in the cause for September's Heart Awareness Month. The core focus for this day was to create awareness for congenital heart defects and help expose children from a young age to healthy living.

Congenital heart defects are abnormalities in the heart's structure that are present at birth. Approximately 8 out of every 1,000 new-borns have congenital heart defects, ranging from mild to severe defects. A great percentage of these children are often undiagnosed, which could ultimately lead to devastating consequences if only found at later stages.

Western Cape Paediatrician, Dr Pieter Fourie assisted this cause by screening all the grade one children at Noord-Eind Primary School for heart murmurs, teaching them about the heart's function and what they should do to keep it healthy. Suspected murmurs were verified by Sensi, a software program interfacing with an electronic stethoscope with the ability to distinguish between pathological and physiological heart murmurs to an accuracy of about 95%.

The children enjoyed the day and participated actively by drawing pictures of healthy hearts. Each child also received a sponsored T-shirt by Cipla and Diacoustic to show that their hearts had been screened. We do hope that this action catches fire under the school health system, where screening for congenital heart defects in schools can become a regular process and awareness on healthy living at an early age can be created.

With this action Diacoustic would like to contribute to the delivery of school health and advocate the importance of screening for congenital heart defects, as well as showcasing the role that technology can play in bringing healthcare to schools.

The parents welcomed the action and received comfort from the knowledge that their children's hearts are defect free. This was especially true for a parent who had a congenital heart defect and thought it necessary for his child to be screened for heart defects.

We would just like to once again thank Cipla and Noord-Eind for making this day a success.

This Month's Q&A Tips

Q: How does the Sensi Software work?

A: The software is able to distinguish between physiological heart murmurs and pathological heart murmurs based on the same features that a doctor would use, namely, s1-s2 timing, systole, diastole, duration, timing, intensity and location of the murmur.

Sensi has just launched its new Getting Started tutorial. Go and view it on our website www.diacoustic.co.za