



Pediatric Case Study  
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## **StethGuard™ Barrier Technology Prevents Transference of Potentially Harmful Microorganisms During A Routine Examination with a Stethoscope in a Pediatric Office**

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Since 1972, many peer reviewed medical publications have implicated the stethoscope as a potential vector in the transmission of bacteria from patient to patient. These studies have primarily focused on the incidence of contaminated stethoscopes amongst doctors and nurses. Medical studies have determined that as many as 90% of all stethoscopes used by doctors and nurses were contaminated with bacteria and as high as 25% of them grew out dangerous bacteria such as MRSA. Routine stethoscope cleaning with alcohol has been recommended by many healthcare organizations such as the American Medical Society, the Center for Disease Control, RID and many others. Unfortunately, healthcare professionals continue to use contaminated stethoscopes primarily because of the time required to properly clean stethoscopes and lack of acceptance that stethoscopes are true vectors of bacterial transmission. Healthcare Associated Infections continue to be a major health issue, affecting 1 in 25 hospitalized patients causing many unnecessary deaths and huge financial drains to the health system.

In a recent study published in March 2014 in the Mayo Clinic Proceedings, it was clearly demonstrated that not only the diaphragm became contaminated with potentially harmful microorganisms but also the distal tubing of the stethoscope was also incriminated in harboring potentially dangerous bacteria.

The purpose of this case report is to demonstrate the efficacy of the StethGuard™ product as a solution in the prevention of stethoscope contamination and eventual cross transference of potentially harmful micro-organisms from one patient to another.

*\*\* This Pediatric Case Report uses Glo-Germ™, a non-toxic fluorescent powder, used to simulate pathogenic microbes. By using a Woods Lamp, the Glo-Germ™ powder becomes fluorescent and glows, making it easy to demonstrate and track cross contamination. Glo-Germ™ has played a major role in the training of patients and staff in major hospitals.*

### 1. Contaminated Patient's Back with Adjacent Clean Stethoscope

A light brush of *Glo-Germ Powder™* was placed on the patient's back to simulate contamination with bacteria.

When examined under a "Woods Lamp", the fluoresced area simulates an area of contamination with pathogenic microbes.

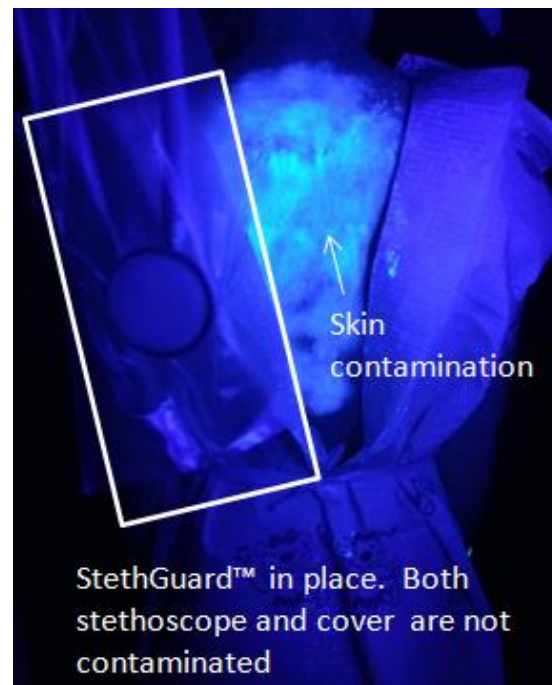
A clean stethoscope was placed next to the patient to demonstrate that there is no "glow" or contamination noted on the diaphragm or distal tube of the stethoscope.



### 2. Clean Stethoscope with StethGuard™ Cover in Place Prior to Patient Exam

An "easy to use" and "disposable" StethGuard™ cover was placed over a clean stethoscope.

Note that there is no contamination observed on either the stethoscope diaphragm and distal tubing nor the StethGuard™ cover prior to examining the patient as compared to the patient's contaminated back.



### 3. Post Patient Lung Exam - The StethGuard™ Cover is Pulled Off the Stethoscope.

After a routine lung exam with the clean StethGuard™ covered stethoscope, the StethGuard™ cover was pulled off the stethoscope and was examined under a Woods Lamp.

A positive transference of the Glo-Germ™ powder from the contaminated patient's back and on to the StethGuard™ cover was noted.

It is clearly visible on the used StethGuard™ cover, the "glowing" outline of stethoscope design that actually came in contact with the contaminated patient.

This fluoresced outline represents potential harmful bacteria that can be transferred to the next patient if proper stethoscope hygiene measures are not implemented.



### 4. Discard the StethGuard™ Cover - Stethoscope and Distal Tubing Remains Clean.

After the StethGuard™ cover was properly removed and discarded, the stethoscope was placed under a Wood's Lamp for examination and was noted to be free of any visual signs of contamination.

This clearly supports the fact that the StethGuard™ barrier technology is a great addition to proper stethoscope hygiene.

The StethGuard™ design covers not only the diaphragm and bell of the stethoscope, but also the distal tubing which are the critical areas that are commonly contaminated with harmful bacteria.



**Conclusion:**

Every day, thousands of infants, children and adults are exposed to dangerous and harmful bacteria by doctors and nurses with contaminated stethoscopes. It is clear that stethoscopes are vectors in the transmission of harmful microbes. This takes place in hospitals, doctor's offices, nursing and rehabilitation homes, emergency rooms, and even ambulances. This ease of cross transference is easily demonstrated by this simple pediatric case study. By implementing the StethGuard™ cover which is an "easy to use", "disposable", and "inexpensive" stethoscope cover, we can eliminate cross contamination of harmful bacteria via contaminated stethoscopes with a high level of success.

