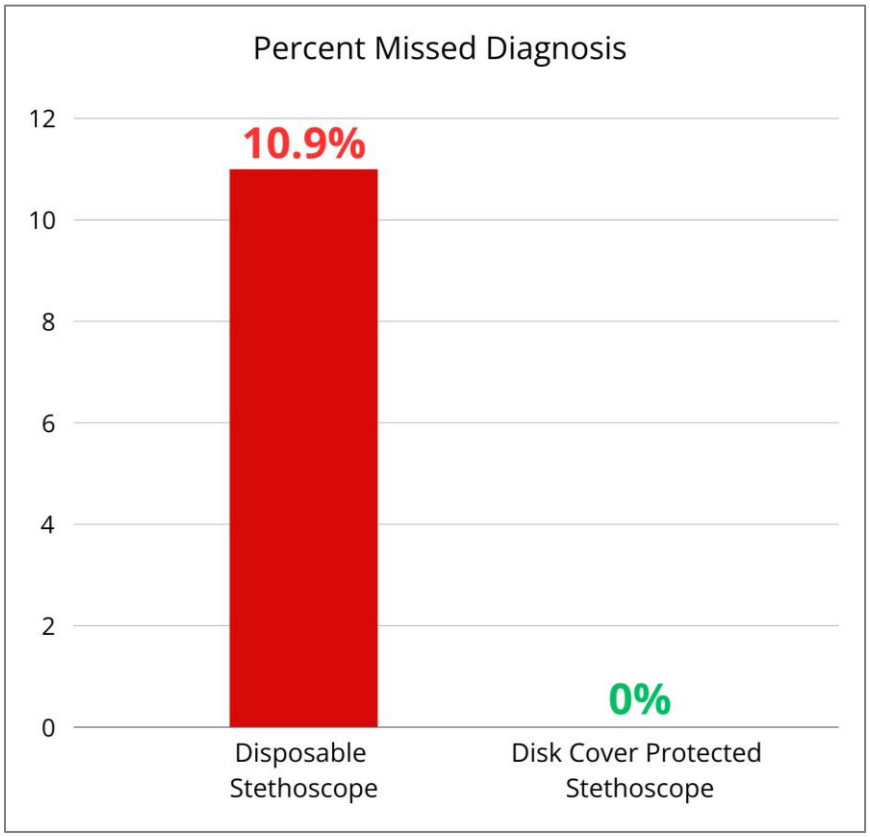
Disposable stethoscopes reduce auscultation quality and have a high potential to cause harm.

The other common method of stethoscope hygiene are the single-use, single-patient, or patient room, disposable stethoscopes.

In a study where clinicians auscultated a Simulation Mannequin with disposable stethoscopes, they misdiagnosed cardiac murmurs 10.9% of the time, consisting of misinterpretation of 9 diastolic and 3 systolic murmurs.[3] Because diastolic murmurs are a major predictor of a heart failure diagnosis, the misinterpretation caused by a disposable stethoscope would effectively delay a diagnosis in heart failure. Unfortunately, research shows that increased time taken in diagnosing heart failure correlates with increased mortality rate.[17]

Disposable Stethoscopes Potential Number Needed to Harm (NNH) = 11



Disposable stethoscopes are colonized with nosocomial pathogens after use.

Practitioner and patient room stethoscopes are colonized with nosocomial pathogens. Samples from intensive care unit practitioner and single-use stethoscopes were observed to have significantly higher quantities and diversities of bacteria than new, unused disposable stethoscopes.[5] In a study, MRSA and *Pseudomonas leuteola* were cultured from personal and intensive care unit shared stethoscopes, respectively, posing an additional safety concern for contamination between clinical staff who share disposable stethoscopes.[18]

Therefore, to effectively practice safe stethoscope hygiene via disposable stethoscopes, hospitals would need to require disposal of these tools immediately after the first use, which could be an extremely expensive protocol to carry out.

MRSA infections are a significant HAI prevalent in healthcare settings[19]

Price Comparison to Disposable Stethoscopes

A simple model compares hospital costs dedicated to purchase and use of single-patient, or disposable, stethoscopes to the acquisition and annual cost of The DiskCover System can help further highlight cost-savings.

A 50-bed emergency department spending an average of $6.00 per single-patient stethoscope on 4,000 patient admissions would be spending **$24,000 on disposable stethoscopes** over the year.

Summary

In conclusion, this model presents projected cost-avoidance from alleviation of time, HAIs, and current practices following integration of The DiskCover System into a facility. After considering the cost of acquisition of The DiskCover System, and the costs of maintaining alternate stethoscope hygiene methods, combining the highest probability scenario from each model yields an **annual cost saving of $355,043.36**. In addition to cost avoidance – compliance, protocolization, and standardization is made easy with The DiskCover System. The speed and ease of use of the system removes variation, and protocolization is made simpler and easier to enforce.

*Assumes list pricing for The DiskCover System, your actual net price may be lower

Environmental Sustainability

From the start of its development to its production and use today, The DiskCover System was designed with environmental sustainability as a major factor.

Disposable Stethoscopes Are Wasteful: 2.5oz of Unrecycled Material

A typical disposable stethoscope contains unrecyclable Acrylonitrile Butadiene Styrene (ABS) earpieces, Poly Vinyl Chloride (PVC) tubing, and Aluminum tubing, equating to 2.5oz of unrecycled material.[41]

ADC Proscope 664 Disposable Stethoscope Specifications

Chestpiece Type:	Diaphragm Only
Chestpiece Material:	ABS
Chestpiece Finish:	N/A
Chestpiece Weight:	.16 oz
Chestpiece Weight(gm):	4.5
Diaphragm Diameter:	1-3/4"
Diaphragm Diameter(cm):	4.45
Diaphragm Material:	PVC
Diaphragm Type:	Standard
Bell Diameter:	N/A
Bell Diameter(cm):	N/A
Headset Type:	Lightweight
Headset Material:	Aluminum
Headset Finish:	Anodized
Tubing Length:	21"
Tubing Length(cm):	53
Total Length:	32"
Total Length(cm):	81.25
Total Weight:	2.5
Total Weight(gm):	71
Scope Warranty:	1 Year

Material Volume Comparison
When evaluating the environmental impact of disk covers vs. the hypothesized equivalent use of disposable stethoscopes, it is clear disk covers represent a mere fraction of material waste that disposable stethoscopes occupy.

Hospitals should dispose of single-patient stethoscopes after discharge of the patient for whom the device was dedicated. A disposable stethoscope might typically be dedicated to a single patient for the full length of their stay. Assuming an average stay of 5 days, with an average auscultation number of 4 per day, each disposable stethoscope can then be compared to 20 disk covers.

With each disk cover being consisted of just 0.01oz of *recyclable plastics*, this means disk covers consist of < 0.5% of the material of a disposable stethoscope. Similarly, 20 disk covers equal just 8% of the materials used for a disposable stethoscope.[41, 42]

Sustainability of Disk Covers

A single disposable stethoscope (2.5oz of UNRECYCLED MATERIAL) can be used to auscultate 1 patient.

250 disk covers (2.5oz of Recyclable Plastic) can accommodate up to 250 aseptic, dedicated patient auscultations.