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# High-Quality, Single-Patient Disposable Stethoscopes:

# Reducing Infection Risk in Isolation Environments

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## Recognizing and lowering transmission of infection risk via stethoscope

The stethoscope is a patient assessment and monitoring instrument used widely by nurses, physicians, and other clinicians, during physical examinations, to provide important functional information, relating to cardiovascular and respiratory function.

Good hygiene and infection prevention considerations take into account that the stethoscope can become an inadvertent means of distributing microbial pathogens within the hospital, transferring a possible source of infection from one patient to another.[1]

Measures to prevent infection transmission in hospitals have been defined by international standards bodies such as the World Health Organization[2] and European agencies, including the European Center for Disease Prevention Control.[3]

These recommended precautions, and additional protocols for patients with COVID-19— i.e., transmission precautions, defined by the basis of transmission: contact precautions, airborne precautions, droplet precautions, etc.[4] have been widely considered throughout healthcare.

## Infection control opportunities between patients

Dedicated hospital infection prevention staff assist in the creation and management of environments where carriers and even suspected potential carriers, are isolated from the rest of the hospital population.

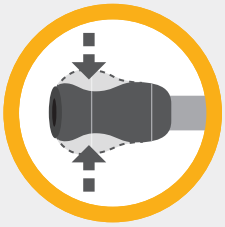
The clinical need to conduct robust, efficient patient assessment, including auscultation, was however unchanged. The greatest focus to facilitate infection control measure, was placed on appropriate decontamination between patients, except in these isolation spaces where the greatest risk was perceived.

Clearly, clinicians need to regularly evaluate patients using a stethoscope as part of routine assessments, even in such high-risk environments.

In many hospital settings, an inexpensive disposable stethoscope is provided for use when auscultating each patient individually under transmission-based precautions.[1,4] However, *a customer validation study* of 67 clinicians performed in 2019 reported that 77.6% of clinicians frequently or always used their own stethoscopes in an isolation environment.[6] The same study found that the introduction of a high-quality single-patient disposable stethoscope would see 92% of the clinicians questioned, less likely to use their own stethoscope in an isolation environment.[6]

## What to look for in Single-Patient Stethoscopes

**Optimal acoustic seal** that helps maintain acoustic sensitivity for accurate auscultation.



**Comfortable eartips** that provide a complete seal at the entrance of the ear canal to help maximize the delivery of physiological sounds and minimize ambient noise.

**Chestpiece with versatile grip** that can accommodate various hand positions and is easy to hold and maneuver.

In early 2020 attention shifted for many healthcare professionals when the emergence of SARS-COV-2, and the associated global pandemic, meant that failure to adhere to strict cleaning and decontamination of medical devices became a more obvious personal risk.

In the current context of COVID-19 pandemic the importance of reducing the risks of cross contamination between isolated patients has been identified as critically important. WHO Guidance simply stated “equipment should be either single-use and disposable or dedicated equipment (e.g. stethoscopes, blood pressure cuffs and thermometers)”.[2]

Current ECDC guidelines transmission-based precautions for COVID-19 patients state that “The use of dedicated or, if possible, disposable medical equipment (e.g. blood pressure cuffs, stethoscopes and thermometers) is recommended.”[3]

Within a matter of weeks after 30th January 2020, following the WHO declaration that the “COVID-19 outbreak was a Public Health Emergency of International Concern” 3M provided a series of communications to inform and advise customers on a number of priority subjects such as appropriate Personal Protective Equipment (PPE) and its correct use, and of the importance of stethoscope hygiene.

Discussion and feedback from healthcare professionals reveals that personal safety concerns have become the major driver, and that as a direct result, strict adherence to cleaning stethoscopes between patients has increased greatly.

Additionally, healthcare facilities have revisited their policies, with some completely forbidding the use of personal equipment.

Others, acknowledging the clinician's quality dilemma, responded by providing significantly higher quality stethoscopes, limited to use on one patient, and to be left at each patient bedside, or in each isolation space, and with a strict policy for their use.

## Adopting and maintaining transmission based precautions

High quality single-patient stethoscopes, which facilitate a quality diagnostic auscultation, by their very presence, remove temptation for healthcare professionals to make use of their own stethoscopes. The ability to be able to perform a robust and accurate auscultation, while adhering to local and national guidelines and policy, helps protect everyone.

In December 2020 a publication entitled *"Keeping PPE barriers in COVID-19 wards while doing proper auscultation" suggested* "Physical examination is a cornerstone of medical assessment, and heart and

lung auscultation is one of its inherent core skills. A full physical examination is required when assessing newly admitted patients and is also required for ongoing assessment of the respiratory and cardiac condition of hospitalized patients in COVID-19 wards, for example to rapidly identify life threatening complications such as pneumothorax or non-endotracheal intubation."[5]

Single-patient stethoscopes with high acoustic quality can be an important factor in the success of adopting and maintaining transmission-based precautions.

Adopting these measures could help resolve the clinical dilemma of choosing between a potentially inadequate disposable stethoscope or using a personal stethoscope that may compromise transmission-based precautions. Taking these steps also encourages more widespread use of single-patient stethoscopes in isolation environments without sacrificing clarity of sound and, as a result, contributes to reducing the potential for cross-contamination.

For more information visit:
**go.3M.com/singlepatientstethoscope**

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