

The Use of a Tactical Throat Mic Guitar Amp System to Improve Communication in Theatre in the Covid Era

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Abstract

* Respirators are currently recommended for use for any aerosol generating procedure * Verbal communication is impeded by the use of respirators * The authors have trialled a simple throat mic speaker system * The system improves both volume and clarity of speech * The authors recommend this, or similar systems to improve communication in theatre

Introduction

During the Covid 19 (SARS-CoV2) pandemic, current guidelines dictate that surgical teams wear appropriate personal protective equipment (PPE) in theatre. Currently, this is at a minimum; an FFP3 respirator, a visor, fluid repellent gown and gloves ⁽¹⁾.

Many surgeons, particularly in ENT where aerosol generating procedures are commonplace have chosen to use non-disposable respirators for durability and comfort. Two common types of multiple use respirators are half face respirators and full-face respirators with polycarbonate lenses.

It is widely accepted that PPE hampers communication between clinical teams due to a number of factors such as the loss of ability to lip read and non-verbal cues as well as the physical barrier to sound that the masks impose⁽²⁾. The latter is particularly noticeable in reusable respirators such as the half and full-face devices.

The authors have trialled a novel throat mic guitar amp system with the view to improve communication in theatre whilst wearing PPE.

Methods

STROBE criteria were used to structure this observational study.

Two systems were trialled in a live theatre scenario. Both authors used throat microphone systems (3.5mm plug Tactical Throat Mic System). One with a Bluetooth Speaker (Bose Soundlink 2) and one directly wired into a 1-watt body worn guitar amplifier (Marshall MS-2R Micro Amp); the latter required removing the 3.5mm plug from the throat mic system and replacing it with a 6.35mm guitar amp plug.

The surgical team (n=7) was asked to rate each surgeon on a visual analogue scale (VAS) for both volume and clarity for one case without sound amplification and one case with sound amplification. The mean results were recorded for each system. Both surgeons used a 3M full face respirator.

Results

With no amplification, the mean volume and clarity scores for both surgeons were 4.3/10 (volume) and 3.4/10 (clarity). For the surgeon with the Bluetooth speaker, the mean volume score was 8.5/10 and clarity

0.9/10. For the surgeon with the guitar amp system the mean volume score was 7.7/10 and clarity 7.0/10. (Fig1).

Fig 1

Discussion

Whilst the Bluetooth speaker improved volume of speech, it was deemed almost unintelligible by the theatre team due to the delay between speaking and the speaker emitting sound. The guitar amp system however, was deemed to be very effective by the whole theatre team. All members involved felt that it improved both the volume and the clarity of the surgeon's speech.

Based on our results, a throat mic guitar amp system (fig.2 & 3) improves communication between members of a theatre team and may in turn have an impact on patient safety.

Our system involved removing the 3.5mm headphone style plug from the throat mic and replacing it with a 6.35mm plug compatible with the guitar amplifier which requires a degree of technical expertise, however simple adaptors are available to overcome this issue.

Fig 2

Fig 3

Conclusion

The use of a throat mic guitar amp system improves communication in theatre by enhancing volume and clarity of voice. The authors recommend the use of a throat mic system for theatre teams or any clinicians whose role dictates wearing respirator face masks.

References

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