

## Human factors training in oral and maxillofacial surgery

Sir,

We thank Davidson and Brennan for their recent article that highlighted the importance of the awareness of human factors within oral and maxillofacial surgery (OMFS).<sup>1</sup> Human factors training in aviation came to prominence after a series of tragic accidents, and the subsequent application of these principles to medicine highlights how our specialty can and should continue to lead within this field.

In Leeds Teaching Hospitals NHS Trust, we have been providing human factors training during our induction programme of our new dental core trainees for the last three years (2016–2019). We combine an awareness of human factors science, reflection of serious incidents in clinical care, simulation training (including situational awareness) and more recently, a structured series of team building exercises.

Our training programme has been received with excellent feedback.<sup>2</sup> We think that this provides a considerable contribution to the daily delivery of excellent care, strengthens our team work, identifies organisational weaknesses, and recognises any potential safety issues.<sup>3</sup>

As a medical Foundation Training Programme Director one of our authors (CM) considers that the emphasis of human factors training has become firmly embedded within the foundation programme. This is less so within the dental foundation or core training programme, however. As OMFS has a predominance of dental core trainees, we think that this should be more strongly promoted at a local level (within departments) and at a national level (through our specialty body, the British Association of Oral and Maxillofacial Surgeons). We also think that education in human factors should be integrated into undergraduate and postgraduate dental programmes.

We suggest that fundamental to the success of this suggestion is the levelling of hierarchies in healthcare teams and the reinforcement of a blame-free learning environment that not only benefits the care of our patients but also the clinical training of our trainees.

### Conflict of interest

We have no conflicts of interest.

### Ethics statement/confirmation of patients' permission

Not applicable.

### References

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## Droplet nuclei aerosol and COVID 19 - a risk to healthcare staff

Sir,

We read with great interest the editorial by Herron JBT et al<sup>1</sup> on the Personal protective equipment (PPE) and corona virus disease 2019 (COVID-19). The authors need to be complimented for a well-timed paper that addresses the current issue of exposure of health care workers to COVID-19.

Authors mentioned that Flüge droplets travel up to 4.5 m, representing a risk to healthcare staff that is not directly involved in patient care.<sup>1,2</sup> It is also noteworthy that the aerosols and droplets produced while speaking has also been linked in person-to-person virus transmission.<sup>3</sup> Large droplets fall on to the ground small droplets can dehydrate and remain as “droplet nuclei” in the air and behave like an aerosol.<sup>3,4</sup>

With the day-time temperature soaring, high-speed ceiling or pedestal fans are being used in hospital wards (Fig. 1). This can expand the spatial extent to which the emitted infectious particles can travel. Health care workers and employees who are not directly involved in patient care are also at risk of virus transmission due to this and need to take adequate precautions.

Furthermore, given the rising number of COVID-19 cases in India, different cadres of healthcare personnel are being inducted in screening and treatment delivery. Community-based health workers are being deployed as the “interface between the community and the public health system”.<sup>5</sup> As they deal with suspected cases, they are also prone to droplet nuclei aerosol exposure. Hence it is advised to educate them



Fig. 1. COVID-19 Isolation ward.

about the droplet nuclei aerosol risk and the use of N95 or FFP2 masks.

As rightly mentioned by the authors, the health care staff and the employee must receive adequate training to use PPE. There is a high chance that newly recruited health care staff lack a thorough knowledge of PPE use. After gowning up, healthcare workers may get a sense of protection. This could be disastrous, as there is always a possibility that the health care staff may become a victim of human error, making them vulnerable. This is a common scenario during the removal and disposing of PPE safely. Once the purpose is served, the users must take utmost caution while disrobing and disposing the PPE. Those at the forefront are busy and stressed with long shifts working in sub-optimal conditions, and fatigue is bound to set in. The staff may overlook the strict protocol of removal and disposal of PPE, thus defeating the entire purpose of wearing PPE.

Lastly, the availability of adequate PPE has been a key concern globally. In India, the certified kits should be made from  $70 \pm 5$  GSM material, adhere to South India Textile Research Association (SITRA) guidelines, seam stitches and be hydrophobic. Avaricious elements have been manufacturing these at a premium without adhering to safety regulations.

Adequate training and education about droplet nuclei aerosol is very important for the safety of our health care professionals and reducing the risk of virus exposure. The training should be simple yet easy to reciprocate so that it can percolate across the spectrum of healthcare workers.

#### Conflict of interest

None.

#### Ethics statement/confirmation of patients' permission

Not applicable.

#### Funding

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#### References

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