



An overview of opinions on nasogastric tubes as aerosol generating procedures during the Covid-19 crisis.

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The President of BAPEN, Dr Trevor Smith has asked me to look into the debate around nasogastric tube placement as a potential aerosol generating procedure on behalf of BAPEN.

There is clearly some difference of opinion over the relationship between nasogastric tube (NGT) or nasojejunal tubes (NJT) insertion and generation of aerosols with important relevance to the use of personal protective equipment (PPE). The varying views and evidence can be reconciled quite simply in a pragmatic manner by looking at the circumstances under which NGT placement is occurring during the Covid-19 epidemic.

We have been told that to protect ourselves and others, we must practice physical distancing of 2 metres to avoid being caught by droplets from coughing. Droplets containing Covid-19 virus are sized at around 10 microns and do not penetrate the lungs to the same depths as an aerosol of 5 microns or less. However, it seems that even coughing can produce an aerosol as defined in the latest **PHE guidance** (<https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control/covid-19-personal-protective-equipment-ppe>). This states that one of the procedures which creates an aerosol is "Induction of Sputum (coughing)". It is clear from our expert nutrition nurse specialists that NGT placement induces coughing often enough for NGT placement to be regarded as an AGP. Since all patients with Covid-19 undergoing insertion of NGT have a cough unless heavily sedated on a ventilator, insertion of an NGT is most likely to induce further coughing and aerosol production.

Furthermore, Covid-19 patients in hospital are in an environment in which aerosols are being produced as a result of suction, CPAP, ventilation, nebulisation or chest physiotherapy. The spread of aerosols in an enclosed space is much greater than 2 metres and for longer (BSG Endoscopy guidance in Covid-19 crisis).

NGT placement has been regarded as a NON-AGP under ideal conditions with no coughing or sneezing induced by the procedure and until recently that was the view driving advice on PPE requirements during NGT placement. A Canadian systematic review in 2012 found little evidence in favour of NGT generating aerosol and increased risk of transmission to healthcare workers (Tran et al, 2012). This review found only 2 low quality studies of NGT transmission to healthcare workers during the SARS 2003 outbreak. The use of this evidence for practical clinical purposes was discounted both by Tran et al and in the HPS document which underpins the evidence base of the latest PHE guidance and WHO guidance, 2014.

I also have available to me an opinion from a very experienced Infectious Diseases specialist physician who represents the UK Royal Colleges of Physicians on the **Academy of Royal Medical Colleges**. He regards NGT placement as NON-AGP but he agrees that this is somewhat semantic when the hospital environment in which the procedure takes place during the Covid-19 crisis is taken into consideration.

However, not all authorities regard NGT placement as a NON-AGP.

ASPEN (American Society for Parenteral and Enteral Nutrition) specifically states it is an AGP – “Placement of any enteral access device may provoke coughing and should be considered an aerosol generating procedure”.

Opinion from many nutrition nurse specialists and members of **BAPEN** is that NGT is an AGP and that full PPE must be used during NGT placement for the protection of the nurse. Their views are based on their clinical experience of placing such tubes and the prevailing environment within hospitals.

NNNG (National Nutrition Nurse Group) guidance on NGT during this crisis initially stated NGT/NJT to be NON-AGP but this view has now been changed. <https://www.bapen.org.uk/pdfs/covid-19/covid-nnng-document-updated-12-04-20.pdf>

Quoting from this document, the NNNG states that:

“The insertion of NG and NJ tubes is considered a non-aerosol generating procedure (AGP) by Public Health England (PHE). However, amongst nursing and other HCPs it is widely acknowledged that there is significant potential for the patient to initiate a cough or may also require suction to the oral cavity or upper airway, which is considered an AGP.

In view of this, we would deem NG and NJ tube insertion to be an aerosol generating procedure and recommend that the PHE guidelines for AGP are followed”.

Furthermore, If NNNG guidance (2016) on NGT placement is followed, patients are advised to clear their nose, if necessary, by blowing or sniffing to identify which nostril is preferable. This might create an aerosol.

The Updated Intercollegiate General Surgery Guidance on COVID-19, 27th March 2020, (endorsed by **Royal Colleges of Surgeons of England, Glasgow & Edinburgh, AUGIS, ASGBI, Assoc. Coloproctology of GB & Ireland**) states “Naso-gastric tube placement may be an aerosol generating procedure (AGP). AGPs are high risk and full PPE is needed. Consider carrying out in a specified location”.

The BDA (British Dietetic Association) have an unequivocal statement that NGT placement is an AGP:

“The insertion of Nasogastric Tubes (NGT) and Nasojejunal Tubes (NJT) should be categorised as Aerosol Generating Procedures (AGP). As a result, any dietitian (or other healthcare professional) asked or required to undertake this role (in any setting), should be provided with appropriate PPE. If you are asked to undertake duties without sufficient PPE, you should refuse to do so and notify your Union Rep or our TU team. You may try to find an alternative healthcare professional with appropriate PPE to complete duties on your behalf. See the FAQ under Employment Rights below for more information”.

From: <https://www.bda.uk.com/resource/covid-19-coronavirus.html>

The RCN (Royal College of Nursing)

We have an undertaking from the RCN of their endorsement of NGT as an AGP.

NGT placement in the Community

The same considerations applying to hospital NGT placement are applicable to community NGT placement in patients' homes or care homes. However, the implications for PPE are less clear due to the lack of available guidelines on use of PPE in the community. The practical constraints on use of PPE in the community are considerable including the non-availability of adequate hand washing facilities (lever arm taps) and suitable places for PPE to be donned, removed and disposed of. The risk of passing on the virus from one patient to another, or to colleagues or family members of the nurses becomes more likely with inadequate facilities for PPE, or inadequate PPE provision which is an ongoing problem at the time of writing. Even if a nurse has recovered from Covid-19, there is still a risk of transmitting the virus via fomites if PPE is inadequate or cannot be used correctly.

NGT (re)placement in the community may be non-AGP if all goes well as most patients will not have active Covid-19 induced coughing but the risk of two-way transmission is considerable since all must be considered potentially infected at the present time. The proximity of the nurse replacing a community NGT is also much closer than 2 metres.

Conclusions - Hospitals

The theoretical view that NGT/NJT placement might be non-AGP is outweighed by the more significant risks associated with the type of patient involved, the hospital environment in which the procedure takes place and the importance of protecting the nurses from Covid-19. An infected nurse out of action in quarantine or worse will detract from the ability of the NHS to respond to this crisis.

In the opinion of BAPEN, full PPE must be used in hospital NGT placements in all settings unless there is certainty that the patient does not have Covid-19. NGT must be regarded for all practical purposes as an AGP.

Conclusions – Community

In the community, the risks may not be as great but a fail-safe approach to protect nurses and others from onward transmission is necessary. In the absence of central guidance on the practical aspects of PPE in the community (e.g. in a tower block corridor outside a flat, or front garden), patients may have to be transferred to hospital for NGT replacement although we have major misgivings that appropriate personnel will be available to provide such a service. We also recognise that such a policy would place a greater burden on hospital services so over stretched at this time. There is thus an urgent need for guidance on how to conduct potentially aerosol generating procedures in the community.

Prepared by Dr Barry Jones BSC, MBBS, MD, FRCP on behalf of BAPEN and its Nasogastric tube Special Interest Group, 11/04/2020. Updated 15/04/2020

This document is the basis for a letter sent to PHE to request that the status of NGT placement be changed to AGP.

References

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