

Perspectives

COVID-19 and PPE in context: an interview with China

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ABSTRACT

The author aims to depict the current COVID-19 pandemic and personal protective equipment (PPE) crisis in the UK. The current situation is put into context exploring the history of global outbreaks of infectious disease and what has been learnt. These lessons are then applied and weighed against the recent response to coronavirus. An in depth interview with a UK biomedical SME based in Shanghai, China is reported in order to inform future procurement of PPE. It is hoped that an appreciation of the dynamic nature of the market will allow adaptations to be made in order to secure reliable supply chains moving forwards.

In 2014 Barack Obama made a speech in which he predicted a future pandemic and encouraged a collaborative approach in planning for such an event. The Ebola epidemic in West Africa started the same year, continuing for 2 years. Ebola has its natural host origin in the fruit bat which is in common with Covid-19 which is found living in horseshoe bats.¹ Exposure to these animal vectors alongside novel mutations in the viral genome has enabled transmission to humans.² According to Jones *et al.* in the NEJM lessons could have been learnt.³ The article highlighted how historically the first reaction to a pandemic has been denial. Could this be that the anticipation of disseminated communicable disease is so feared that the initial reaction is one of non-acceptance, somewhat like the first stage of grief in Kübler-Ross's model?⁴ If so, how can we move towards earlier acceptance of the risk and work towards a more cohesive response to ensure preparedness?

Whilst the current viral pandemic is exceptional in its impact on global health and the economy, a recognition that shared decision-making is required will embolden future coordination. Intense concern regarding individual protection on a national scale using personal protective equipment (PPE) has been at the forefront of the public health agenda in the UK. It is emphasised that if used appropriately, PPE can prevent transmission. There has been a distinct lack of clarity in how PPE is procured once the pandemic stores dried up. Whether it be via the NHS supply chain or private means, a greater understanding of the process is required to assist in

breaking down the problems encountered in order to ensure a seamless supply.

In an interview with a UK small to medium enterprise (SME) based in Shanghai. I enquired of the director on the dynamics of the market in China, who are the main exporters of PPE. 'In January...no foreign entity was allowed to buy or export PPE. China eased restrictions on us buying PPE around the end of February, after which we had a lot of suppliers approaching us for PPE sales'.

Subsequently, as China opened its doors again, the demand for PPE swelled. 'Around the beginning of March, we saw a surge in demand from US and EU sources, affecting the market and stock availability. They were buying in large quantities and product lead times increased to around 7 days (from 1).

In addition, the time taken to transport product ex-China has increased—previously our freight forwarder could move express items to the UK within 3 working days direct from our Chinese factories by air. International flight restrictions combined with an increased demand for express deliveries have pushed this to 2 weeks-plus as orders are forced to queue for space on the limited flights, compounding lead times.'

Regarding access to protective gowns which have been found wanting in supply, 'Yes, we have availability but there is a shortage of non-woven material in China used in the manufacture of the gowns. We currently charge £7.00 per gown due to an increase in supply costs - this is up from a

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pre pandemic price of about £0.80 for a full sterile surgical gown. We expect the fabric shortage to ease in May and prices might go down to about £3.00 per gown. We are advising our customers to seriously consider ordering with a buffer of 1-3 months worth of stock as lead time for PPE such as gowns and aprons is now up to 30 days including shipping to the UK even via express air freight. We came up with a scheme offering a full refund for PPE returned unused after three months if a customer buys the excess/buffer stock’.

I enquired about the factories and whether it was business as usual now.

‘As of the last week of April, many PPE suppliers have been mandated to produce solely for the Chinese government providing for orders of facemasks, visors and gowns. However, there are a large number of PPE suppliers in China – the benefit of smaller companies like ours is our flexibility, and we switch to new suppliers as necessary’.

What is your production capacity?

‘The key challenge is not capacity but lead time. Under the extensive lead times currently required (and increasing) and the inherent uncertainty in the situation we are advising our customers, including NHS and care homes, to put in orders now and plan to stock up for the near future’.

What is your lead time?

‘3–7 days for product to be ready for shipping; 21 days for shipping by express air freight, 30–40 days for shipping by sea’.

I understand you have supplied mainly GP surgeries. What problems have you encountered in corresponding with the UK?

‘A lack of understanding of just how dynamic the market and procurement of PPE is. There is no shortage of procuring the products if done along the right channels, however there is a huge bottleneck in getting the PPE out of China and it would be prudent to not wait for demand in the UK to become urgent before ordering’.

Have you had any problems dealing with the Chinese suppliers?

‘Stricter regulations recently enforced by China add to bureaucracy but should have the positive effect of preventing low quality PPE and testing kits being exported’.

Does the NHS make any specific requirements of PPE compared to Chinese health service?

‘NHS tend to ask for brand names as opposed to device/PPE requirements, limiting scope of what can be supplied and these favoured brands vary by trust. Also, all orders are “Urgent”—we suggest our customers to plan ahead when ordering at least a month in advance to reduce their costs.

New rules imposed by the Chinese government mean that PPE for the international market is subject to stricter quality requirements compared to the products meant for the local Chinese health service. We abide by these rules and supervise and ensure all our products have a 100% inspection rate, CE certificate and most importantly our suppliers have to have a government licence to manufacture and export PPE’.

What is your experience of being involved with the competitive bidding market?

‘We have been bidding for NHS tenders for the last four years and are very used to the competitive market. We know we are very competitive when it comes to price however one cannot help but see that buyers find comfort in purchasing brands with which they are familiar whilst limiting their choice and product availability’.

What could the UK do to improve working relations with SMEs supplying PPE looking forwards?

‘SME’s are agile and can react to ever changing situations, such as in a pandemic, where there are so many factors at play. We have a shorter chain of command meaning if a new supplier is identified we can evaluate and approve a supplier in a relatively short time. Smaller overheads mean lower costs for the NHS and less pressure on already restricted budgets’.

This invaluable insight into how an SME can navigate the market with somewhat more flexibility could have the potential to improve communications ensuring more timely adaptations to what is a dynamic supply chain. Unilateral procurement has been necessary by individual trusts that have also been identifying neighbouring trusts in need, but ideally this would eventually be adequately provided on a national scale.

With the UK’s exit from the European Union (EU), this will become essential as emphasised by Flear *et al.* In the context of a pandemic, they stress the importance of defining the precise roles of key players in the field.⁵ The relative reliance the UK had on the EU was recently demonstrated by the catastrophic leap for independence by not joining the EU medical supplies consortium which may have meant missing out on PPE supplies. In anticipation of departure from the single market which includes the Joint Procurement Agreement and the European Medicines Agency, clear lines of communication and establishment of flexible supply chains will be vital to navigate the future impact of infectious disease.⁵

Conflict of interest

No competing interests.

References

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