Testing improved considerably in April 2020, after the UK Government announced their plan to rapidly scale up testing and introduced the five-pillar testing system with designated testing pathways for NHS keyworkers and antigen testing. Respondents to our call for evidence reported feeling significantly more protected once they were properly able to test patients.

> *'The main difference compared to the first wave was the ability to test for covid and feel safer around patients who were known to be negative.'*
> *(Medical academic trainee, England)*

Recommendations

– Public health systems should be resourced and funded to have adequate contact tracing capacity and be able to rapidly scale up testing for future variants or pandemics.

Questions for the inquiries to answer

– How long into the first wave did it take governments to understand that mass testing was of critical importance in controlling COVID-19?

Personal protective equipment supplies were insufficient, and processes for training and ensuring safe fit were inadequate

PPE is designed to protect the wearer from exposure and damage from a hazardous substance at work. While PPE always plays a role in health and social care settings, with the onset of the pandemic the need and demand for PPE exploded. PPE became significantly more important due to the nature of COVID-19 as a disease, which is caused by a highly transmissible respiratory virus that can be transmitted by droplets and aerosols. PPE access, quality, and fit were some of the key concerns that medical professionals highlighted in our call for evidence. Their experiences of accessing PPE and whether it provided them with the appropriate level of protection varied significantly, including across specialities and settings, as well as demographic characteristics such as ethnic group, gender and the presence of a disability or long-term health condition.

Initially supply in general and of specific items was an issue

In the initial stages of the pandemic, PPE supply was a major issue. PPE procurement and the transparency of the process have raised some serious concerns. The nature of PPE procurement changed during the pandemic and has at different times been a patchwork of different processes. For example, initially the central pandemic stockpile was managed by the DHSC (Department of Health and Social Care) on behalf of all four nations, then when PPE procurement was ramped up with the publishing of the PPE strategy, this was also being managed centrally by DHSC[33]. At the same time, devolved governments were also working to secure their own supply of PPE and were responsible for managing their own stock.[34,35,36] This is all while GP surgeries and other organisations that were initially outside the formal NHS supply chain secured their PPE supplies from commercial suppliers[37].

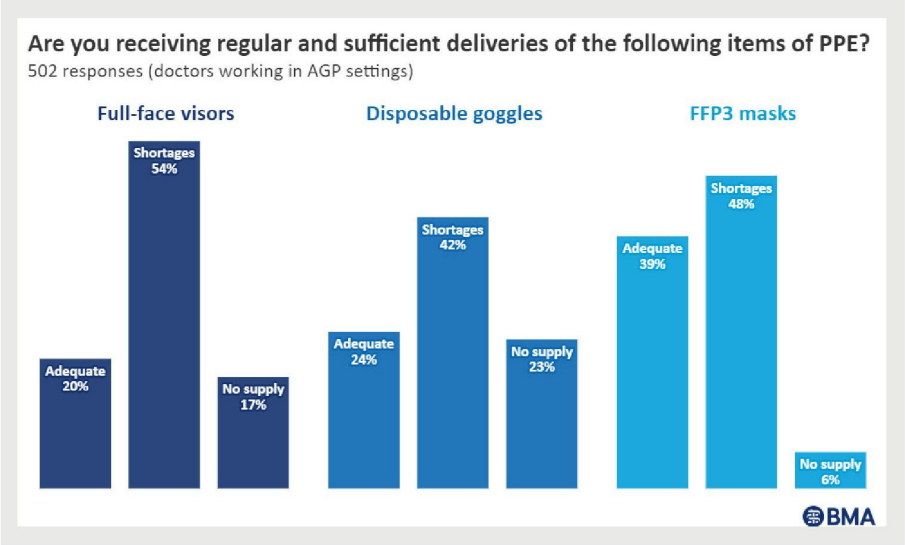
As early as the beginning of March 2020, it was apparent that there was an unparalleled global demand for PPE, which led to severe shortages and a lack of supply worldwide[38]. The UK Government initially made the mistake of believing that its existing supplies would be sufficient[39]. NHS England, for example, gave assurances to the Health and Social Care Select Committee that the England stockpile would be enough to manage the whole of the pandemic, whereas it barely lasted two weeks. This meant that as late as mid-March the UK Government was more focussed on ensuring delivery of existing stock than on increasing its procurement. So, when the UK Government scrambled to secure more supplies in late March and April – as demand began vastly outstripping what they thought would be sufficient supply – they entered a crowded marketplace.

'We were sent 6 pairs of gloves and 6 aprons in an envelope approximately 3 weeks after the start of lockdown.'
(GP contractor/principal, Northern Ireland)

This created significant problems because the procurement process was more prone to risk than would normally be the case[40]. This led to well-documented cases of PPE being procured from organisations with no experience of producing PPE and of PPE being delivered that was unsuitable for use on the front line. While the UK Government worked quickly to address this problem, their process was often flawed. For example, frontline health and care organisations with relevant PPE knowledge – such as the BMA – were unable to recommend leads to the high-priority lane for contracts, while leads from ministers and lords were more actively pursued[41]. There was also a general lack of transparency surrounding the deals struck to source PPE. The lack of the UK's domestic capacity to manufacture PPE was an added difficulty and something the BMA highlighted to the UK Government at the time.

...meaning many medical professionals worked without adequate protection
Importantly, the delays in procurement and subsequent errors meant that medical professionals on the frontline often had to go without PPE, reuse single-use items or use homemade or donated items. The BMA repeatedly highlighted that medical professionals were not being provided with the PPE they needed throughout the pandemic, and our surveys show that there were acute shortages – even in AGP settings. Respondents who worked in an AGP setting told us that there were shortages or no supply of full-face visors (71%), disposable goggles (65%) and FFP3 masks (54%) (see Figure 3).[42]

Figure 3



PPE shortages were also frequently mentioned in our call for evidence by respondents working in both AGP and non-AGP settings.

'At the start, despite knowing of the virus spread, no PPE was provided. Not even masks let alone thinking of level 2 PPE for aerosol generating procedures. This was when many of my colleagues and I became ill.'
(Consultant, Wales)

'We made our own, and bought our own when we could find any, we depended on friends sourcing FFP3 masks, my son's school 3D printing visors.'
(SAS doctor, England)

'Amazed at how paltry it was, [I] felt undervalued. Like going over the top in WW1 with a bow and arrow.'
(GP contractor/principal, Northern Ireland).

Going without PPE put doctors in the extremely difficult position of having to continue to treat patients knowing they were not being as well protected as they should have been. Respondents reported that they often had to reuse items or use items that were out of date, with multiple expiry stickers visibly layered on top of each other. The situation was so severe, that at the time the BMA had to produce guidance for staff detailing their rights and moral obligations to continue working if they did not feel adequately protected. Worryingly, many respondents to our call for evidence, particularly those working in hospitals, reported feeling pressured to work without adequate protection and described the worry and anxiety this caused.

> *'I was put under pressure to carry on regardless and 'support my colleagues'.'*
> *(Consultant, England)*

> *'Expected to put yourself at risk no questions asked.'*
> *(Junior doctor, Northern Ireland)*

Some respondents told us they felt unable to challenge management in this context.

> *'Many of my senior doctors were not wearing PPE in meetings, I was clinically extremely vulnerable and had shielded and this made me very anxious. However, I was new and did not feel I could speak up.'*
> *(Junior doctor, England)*

49% of respondents[43] who experienced a shortage of PPE said they had not reported or spoken out to their employer about this shortage, often because they did not believe any action would be taken (36%) or they were worried or fearful about speaking out (11%). Going without PPE was more commonly reported among ethnic minority doctors for example only 59% of ethnic minority doctors in general practice reported having full or adequate PPE as compared to 77% of their white counterparts.[44]Feeling worried or fearful about speaking out was more commonly reported by ethnic minority respondents (14%), those with a disability or long-term health condition (17%), GP trainees (19%) and SAS doctors (20%)[45].

The situation improved after the first wave, but for much of the pandemic staff were inadequately protected

Respondents in AGP settings told us that generally PPE supplies improved from April 2020 into May 2020[46], and the acute shortages seen at the beginning of the pandemic subsided – although we were still receiving reports about PPE shortages as late as August 2020[47].

However, other issues with PPE persisted, due to the problems with the IPC guidance. As previously discussed, the IPC guidance did briefly recognise that aerosol transmission occurs outside of AGPs and therefore logically RPE would have to be worn in the routine care of COVID positive patients[48]. However, this guidance has since been rescinded. This means that some healthcare workers were –and still are – working with an unsuitable level of PPE. Our call for evidence showed this caused an understandable level of anger among healthcare workers.

> *'Early in 2020 (Jan-Feb) I received training from the health board which told us that we would need high grade PPE and that a normal surgical mask was inadequate. Imagine my surprise then when what we received on the ward was normal surgical masks and were then told this was "fine".'*
> *(Junior doctor, Scotland)*

> *'Healthcare workers died due to insufficient PPE. It should have been FFP3 for all not just ICU staff.'*
> *(GP contractor/principal, Scotland)*

> *'We were seeing patients who had COVID, but because of the advice that was behind the curve, they were deemed to be low risk [...] We needed proper protection with FFP3 masks, but these were not considered necessary and were not provided. It was in April 2020, whilst wearing inadequate PPE that I caught coronavirus from a patient.'*
> *(GP contractor/principal, England).*

PPE fit and availability of fit testing were an issue, especially for certain groups
A lack of PPE was not the only barrier to healthcare workers being properly protected. For PPE, especially RPE, such as FFP2/FFP3 masks, to work effectively they must be properly fitted and be tight fitting. Poor availability of fit testing to ensure properly fitted masks was a frequent problem cited by respondents in our call for evidence. Moreover, where fit testing did occur, it was often useless as shortages meant only poor-fitting masks were available.

> *'It was really poor; little or no fit testing and even if you had been fit tested, the chance of finding the right mask was very remote.'*
> *(Consultant, England)*

> *'Haphazard availability, multiple fit testing due to masks going out of stock.'*
> *(Consultant, Northern Ireland)*

Women particularly struggled to find well-fitting masks. There is a gender bias within PPE – which is largely manufactured to suit white male faces and physiques – meaning PPE often did not fit women, who make up around 77% of the healthcare workforce[49]. This was a problem that was highlighted to us throughout our call for evidence and persisted throughout the pandemic.

> *'I had initially struggled to get a face fit mask which worked for me as a small woman. When I did have a successful face fit, masks were never delivered to my workplace in the correct size and style.'*
> *(GP contractor/principal, Scotland, female)*

> *'I didn't feel fully protected at all and in particular being female and small and failing fit testing several times with several masks I was left feeling quite vulnerable from this.'*
> *(Consultant, England, female)*

Similarly, access to well-fitting PPE was also raised as a problem by some ethnic minority respondents.

> *'Using FFP3 with black hair is easier with a hair cover. The elastic snags. PPE posters do not routinely show or normalise the reasonable adjustments necessary for non-religious and religious reasons for covered hair.'*
> *(Consultant, Scotland, Black/Black British)*

Other research has also suggested that failure rates for fit testing are higher in staff from ethnic minority backgrounds[50].

Female respondents and those from ethnic minority groups consistently reported slightly higher rates of failing a fit test[51], compared to male respondents or those from white ethnic backgrounds. On average, 8% of female respondents and 9% of ethnic minority respondents reported failing a fit test during this time, compared to 7% of male respondents and 7% of white respondents.

Guidance on using PPE and on donning and doffing safely was often inadequate
Relatedly, we also received a lot of testimony about the quality of PPE guidance and use in general. Practices like safe donning and doffing play a key role in ensuring the safety of the wearer and ensuring that hazardous PPE is safely disposed of.

There was a large degree of variation among respondents regarding how well trained they were in using PPE, but also in safely taking it off. Some respondents reported receiving quality doffing and donning training and they emphasised that this was usually locally organised and in contrast to centrally administered guidance.