



National Audit Office

Report

by the Comptroller
and Auditor General

Department of Health & Social Care

The supply of personal protective equipment (PPE) during the COVID-19 pandemic

Key facts

£146m

value of personal protective equipment (PPE) ordered by NHS trusts and NHS foundation trusts in 2019

£15bn

Department of Health & Social Care's budget for PPE in 2020-21

32bn

number of PPE items procured to manage COVID-19, February to July 2020

- 400 million** number of personal protective equipment (PPE) items in the Pandemic Influenza Preparedness Programme stockpile, January 2020.
- 3%** gowns in centrally-held stock on 21 April as a percentage of the estimated daily requirement to manage COVID-19.
- 14%** PPE items distributed to social care providers as a percentage of all PPE items nationally distributed, between 20 March and 31 July 2020.
- 10%** PPE items distributed to social care providers through national schemes as a percentage of their estimated PPE requirement, between 20 March and 31 July 2020. By comparison, trusts received 80% of their estimated requirement.
- £214 million** initial value of orders from two contractors for respirator masks which will not be used for the original purpose.
- 49%** Black, Asian and minority ethnic nurses responding to a Royal College of Nursing survey who reported that they had been adequately 'fit tested' for a respirator (to ensure a sufficient seal), May 2020. This compares with 74% for white British nurses. There were 5,023 respondents to the survey.

Summary

1 Personal protective equipment (PPE) is vital during a pandemic because it protects the wearer or user from catching an infectious disease from contact with other people. PPE can also help protect patients against onward transmission of a disease. Before the pandemic, relatively few workers needed to wear PPE and it was relatively straightforward to acquire. NHS trusts and NHS foundation trusts (trusts) bought much of their PPE from the NHS Supply Chain, a centralised procurement facility, whereas other NHS providers and adult social care providers generally used private sector suppliers.

2 COVID-19 has had an extraordinary impact on global demand for, and supply of, PPE in 2020. Demand for PPE rocketed in England from March, when NHS and care workers, together with key workers in other industries, started to require protection from patients, colleagues and members of the public who potentially had COVID-19. There was also a surge in demand in other countries. At the same time, the global supply of PPE declined as a result of a fall in exports from China (the country that manufactures the most PPE) in February. Some other countries also imposed temporary restrictions on the export of PPE. The result was an extremely overheated global market – a ‘sellers’ market’ – with desperate customers competing against each other, pushing up prices, and buying huge volumes of PPE often from suppliers that were new to the PPE market. The situation was made more difficult as the guidelines for wearing PPE, and the specifications and certifications that different types of PPE must meet, are complex and were updated throughout the pandemic, in particular as understanding of the virus improved.

3 This report examines:

- responsibilities for PPE supply in England (Part One);
- the emergency response to PPE shortages, focusing on the performance of national bodies in obtaining and distributing PPE to local organisations (Part Two);
- the experience of health and social care providers and their workforce (Part Three); and
- the Department of Health & Social Care’s (the Department’s) new PPE strategy (Part Four).

4 This report does not include an examination of the procurement process and controls in place during the emergency. A separate National Audit Office report, published in November 2020, examined government procurement during the pandemic, including the checks carried out into the suitability of new suppliers of PPE, and how offers from suppliers were considered.¹

5 This report contains references to companies where Government is subject to procurement challenge or judicial review. The Government fully reserves its position as regards the judicial review proceedings in relation to some of the contracts referred to in this report.

Key findings

Preparedness for the pandemic

6 The Department redeveloped the NHS Supply Chain (the operating model for central procurement for trusts) in 2018, to prioritise financial savings.

The Department created a new body (Supply Chain Coordination Limited (SCCL)) to manage the NHS Supply Chain in 2018. Before the pandemic, local health and care providers bought PPE either directly from suppliers or through the NHS Supply Chain. Trusts spent around £146 million on PPE in 2019, including £61 million through the NHS Supply Chain. The Department set targets for the NHS Supply Chain to increase its share of NHS procurement and achieve financial savings for the NHS. These were surpassed in 2019-20. However, the Department's performance management regime did not include any targets related to the resilience of supplies to the NHS and the operating model was not designed to respond to a pandemic (paragraphs 1.4 to 1.6, and Figure 2).

7 Before the pandemic, responsibility for managing PPE supply and stockpiles was spread across multiple public bodies and private sector contractors.

The redeveloped 2018 model meant that while SCCL was responsible for the management of the NHS Supply Chain, it contracted out both procurement and distribution of PPE to contractors, which in turn contracted with PPE suppliers. Social care providers bought their PPE directly from PPE suppliers. The Pandemic Influenza Preparedness Programme (PIPP) stockpile, which contained around 400 million items of PPE for use during an influenza pandemic, was owned and managed by Public Health England (PHE) on behalf of the Department (which set the policy for the stockpile). PHE contracted SCCL to manage this stockpile, and SCCL then subcontracted the storage and distribution roles to Movianto, a private contractor. The Department itself managed a smaller stockpile which was held in case of disruption following a 'no deal' EU Exit (paragraphs 1.5, 1.8 and 1.10, and Figure 2, Figure 3 and Figure 4).

¹ Comptroller and Auditor General, *Investigation into government procurement during the COVID-19 pandemic*, Session 2019-2021, HC 959, National Audit Office, November 2020.

8 Government's stockpiles of PPE were intended for an influenza pandemic and they were inadequate for a coronavirus pandemic. Collectively the PIPP and EU Exit stockpiles provided an estimated two weeks' worth, or less, of most types of PPE needed by the NHS and social care during the pandemic. Furthermore, the PIPP stockpile did not include gowns which were later needed during the pandemic (paragraphs 1.8, 1.9 and 1.14 and Figure 4).

The Parallel Supply Chain

9 Government attempted to use its stockpiles to meet demand for PPE but faced distribution problems and a lack of information on local requirements. PHE was responsible for the PIPP stockpile, and contracted SCCL to manage it and provide PHE with advice on logistics and supply chain management. There were difficulties distributing PPE from the stockpile, including physical access to stock and a lack of information on how much PPE each trust needed. The Department brought in the Ministry of Defence to lead a rapid assessment of the situation in March. Following this, the Department decided that the NHS Supply Chain's infrastructure and operations would not be able to cope with the pandemic demand (paragraphs 1.16 to 1.20, and Figure 3).

10 The Department set up a Parallel Supply Chain in late-March to manage the rapidly deteriorating situation. SCCL started to increase procurement of PPE from its existing suppliers in February, but this was not enough and far more PPE was required. Given the soaring levels of demand for PPE, the stockpile and distribution challenges, and disruption in the global market for PPE, the Department created a Parallel Supply Chain. This aimed to urgently source and distribute PPE to trusts and other health and care providers by obtaining PPE through SCCL's existing suppliers, new suppliers and new UK manufacturing. The Parallel Supply Chain included a team of around 450 staff to find and buy PPE, plus a new distribution system (paragraphs 1.14, 1.16, 1.20, 1.21, 2.2 and 2.3, and Figure 5 and Figure 6).

11 Between March and mid-April, the Department developed a full estimate of the PPE required across health and social care, which predicted that massive amounts of PPE would be needed. The Department's estimate of the total PPE required for the next 90 days indicated that a far greater volume of some items of PPE would be required than was held in the PIPP stockpile. For instance, this requirement model showed that nine times more aprons would be needed than had been calculated to be necessary for the PIPP stockpile (paragraphs 2.7 and 2.8).

12 The Department ordered 14.6 billion items of PPE by the end of May.

The first contract to a new supplier was awarded on 22 March and by the end of May the Department, through the Parallel Supply Chain, had ordered 14.6 billion items of PPE worth £7 billion. Of this, 7.3 billion items were from suppliers already on an SCCL framework. Once ordered, suppliers might have needed to wait for their manufacturer to produce the PPE, which was then transported to the UK (with almost all PPE ordered by the Parallel Supply Chain being imported). On receipt, the items needed to be checked before they could be released for distribution to local organisations (paragraphs 2.13, 2.18 and 2.22).

13 Because of the time lag between ordering the PPE and it being available to use, the Parallel Supply Chain could barely satisfy local organisations' requirements.

During April and May, central stock levels for most types of PPE remained negligible despite existing suppliers to SCCL delivering 738 million items in April and May and new suppliers delivering 235 million items over the two months. Trusts and other local organisations relied on getting PPE from a combination of centrally-allocated deliveries, what they could buy directly themselves, and items shared by other organisations with higher stock levels. Towards the end of May, the position was improving and the Parallel Supply Chain reported holding at least one day's worth of stock across all types of PPE for the first time (paragraphs 2.9, 2.22, 2.24, 3.8 to 3.10 and 3.18, and Figure 7 and Figure 12).

14 Until 4 May the Parallel Supply Chain had limited information on the PPE held by local organisations and prior to that it undertook a daily engagement process with stakeholders to inform its distribution of PPE.

Neither SCCL nor any other national body held information on how much PPE local organisations held in stock. The Parallel Supply Chain therefore distributed PPE to trusts and local resilience forums on a 'push' basis, and initially all trusts received the same amounts. However, the Parallel Supply Chain created and refined a process to better inform its distributions. This was based on estimates of the PPE required by local organisations, reflecting guidance for PPE usage and the number of patients. It adjusted these estimates to reflect information from NHS regions, local resilience forums and the National Supply Disruption Response team (a helpline for providing emergency deliveries of PPE to organisations close to running out). This process was continually updated, and from 4 May the Parallel Supply Chain was able to collate data daily from trusts on the PPE they held (paragraphs 2.5 to 2.6 and 3.8).

15 The Parallel Supply Chain's procurement processes were designed to enable rapid procurement, but this meant that some PPE was procured that did not meet requirements, wasting hundreds of millions of pounds. The chaotic nature of the PPE market during the pandemic increased the risks involved in purchasing PPE, including that suppliers might not provide products of the standard required. The Parallel Supply Chain had a process to check suppliers' equipment against government's PPE specifications so that equipment that failed to meet requirements could be placed into quarantine and not issued to local organisations. However, in some cases the Parallel Supply Chain bought equipment that did not meet the specifications. Across two contracts within our audit sample, it ordered 75 million respirator masks, with a total cost of £214 million, that the NHS will not use for the original purpose (although one of these suppliers has since agreed to vary the contract). Tens of millions of respirator masks ordered from other suppliers and some other types of PPE are also likely to have problems being used for the original purpose. The Department told us that 195 million items are potentially unsuitable. We have not been able to verify this figure (paragraphs 2.16 to 2.20).

16 The Department's spend on PPE has been enormous, owing to both higher prices and increased volumes. Between February and July 2020, the Department spent £12.5 billion on 32 billion PPE items.² There have been substantial increases in the unit price paid for PPE compared with 2019, caused by the global surge in demand and restrictions on exports in some countries. These increases ranged from a 166% increase for respirator masks to a 1310% increase for body bags. The Department had to pay such high prices because it was in the position of needing to buy huge volumes of PPE very quickly. Had government been able to buy PPE between February and July 2020 at the same unit prices it paid in 2019, then overall expenditure on PPE would have been £2.5 billion. In July 2020, HM Treasury approved up to £15 billion for spending on PPE in 2020-21, including freight and logistics (paragraphs 2.10 to 2.12 and Figure 9).

² This report has identified that, between February and July 2020, orders for PPE totalling £12.5 billion were made through the Parallel Supply Chain. We recently published *Investigation into government procurement during the COVID-19 pandemic*, which identified that the total value of PPE contracts awarded by government departments between January and July 2020 was £12.3 billion, based on contract data supplied by the Department of Health & Social Care and other departments. The difference is likely to be due to different populations, data sources, time periods, and time the information was obtained.

The experience of front-line workers and organisations

17 NHS and social care representatives criticised government guidance on PPE and how it was communicated. To ensure that they are properly protected, front-line workers in health and social care (and their employers) rely on official guidance on infection prevention and control to understand what PPE is needed, when it is needed and how to use it. In England, this guidance is issued jointly by the Department, PHE and NHS England & NHS Improvement (NHSE&I) and it needed to be updated frequently to reflect an increasing understanding of a new virus. After its publication on 10 January the guidance was changed 30 times by 31 July, including material and relatively minor changes. However, social care representatives, and health representatives to a lesser extent, raised concerns over the guidance, including that the frequency of changes made it confusing, and that the measures outlined were not sufficient to protect workers properly. Social care representatives were concerned that – even when it was labelled as being for social care – much of the guidance was explained for healthcare settings and had not been tailored for social care settings. The British Medical Association was concerned that the guidance at the time did not recommend gowns and eye protection for workers in all healthcare settings (paragraphs 3.2 to 3.7 and Figure 14).

18 At times, many front-line workers in health and adult social care reported not having access to the PPE they needed during the height of the shortages. The NHS provider organisations we spoke to told us that, while they were concerned about the low stocks of PPE, they were always able to get what they needed in time. However, this was not the experience reported by many front-line workers. Feedback from care workers, doctors and nurses show that significant numbers of them considered that they were not adequately protected during the height of the first wave of the pandemic. Member surveys by the British Medical Association, the Royal College of Nursing, the Royal College of Physicians and Unison in April and May 2020 showed that a significant proportion (at least 30%) of participating care workers, doctors and nurses reported having insufficient PPE, even in high-risk settings. From this survey evidence we cannot know how representative these experiences are of the whole workforce, but occurrence of shortages is supported by other qualitative evidence. Directors of Adult Social Care also stated that essential supplies were not getting through to the social care front-line (paragraphs 3.7, 3.8 and 3.17 to 3.19, and Figure 16).

19 Adult social care providers considered that they were not adequately supported by government in obtaining PPE. The Department told us that it took different approaches to providing PPE to social care and trusts during the pandemic. Social care providers, of which there are many and which are mostly private- or voluntary-sector organisations, either obtained PPE from wholesalers (as they did prior to the pandemic) or from local resilience forums and the Department's helpline which it set up to respond to emergency requests. Whereas trusts received PPE directly from the Parallel Supply Chain. The adult social care sector received approximately 331 million items of PPE from central government between March and July (this was 14% of the total PPE distributed and 10% of their estimated need). This compared with 1.9 billion items sent to NHS trusts (81% of PPE distributed and 80% of estimated need) although PPE requirements may differ between different settings. Social care providers and representative bodies told us that the support they received was inadequate. Many social care providers highlighted being extremely close to running out of PPE, which in turn created uncertainty, anxiety and stress. The cost of PPE during the pandemic has also increased financial pressure on the adult social care sector. Government has though allocated additional funding to local authorities to help them deal with the impact of COVID-19 and has committed to provide free PPE to care homes over winter (paragraphs 2.5, 2.23, and 3.10 to 3.15, and Figure 15).

20 Employers have reported 126 deaths and 8,152 diagnosed cases of COVID-19 among health and care workers as being linked to occupational exposure.

All workers in health and care should have had access to appropriate PPE and training both to reduce their own risk of acquiring COVID-19 and the related risk of onward transmission. Employers have reported cases to the Health and Safety Executive where they considered there was reasonable evidence to suggest that infection was caused by occupational exposure. However, it is not possible for us to confirm whether PPE or other infection prevention and control measures played any role in these cases (paragraphs 3.17, 3.22 and 3.23 and Figure 17).

Readiness for future challenges

21 The Parallel Supply Chain and NHS Supply Chain procured 32 billion items of PPE between February and July. Over the same period they distributed 2.6 billion items to front-line organisations. As a result, as at the end of September, the Department reported that it was on course to have stockpiled four months' supply of PPE by November 2020. At that time it had not yet received most of the PPE procured, including some that was still to be manufactured: some 6.6 billion items (21%) had been received and another 5.1 billion (16%) were in the UK but not yet with the Parallel Supply Chain. The Department expected two-thirds of the remainder to be delivered by the end of 2020 (paragraphs 2.10, 2.23, and 2.25 to 2.26).

22 The new PPE strategy aims to secure a resilient supply of PPE but could be challenging to implement.

The Department published a new strategy in September 2020.³ The strategy aims to increase resilience by means of a bigger stockpile, a much larger UK manufacturing base, a better distribution network, and an improved understanding of user needs. There are, however, challenges to overcome, including how to sustain a large UK manufacturing base for PPE that might not be competitive in cost terms (paragraphs 4.2 to 4.6. and 4.10 to 4.12).

Conclusion

23 Government's response saw the Parallel Supply Chain's workforce, and procurement staff in provider organisations on the front line make a huge effort, going far beyond what would usually be expected. The Department and its partners deserve some credit for building at pace a new international supply chain and distribution network. But there are important aspects that could and should have been done much better in supplying PPE.

24 Government initially considered it was well-placed for managing the supply of PPE in a pandemic, with tested plans and a stockpile in place. But neither the stockpiles nor the usual PPE-buying and distribution arrangements could cope with the extraordinary demand created by the COVID-19 pandemic. As a result, government's structures were overwhelmed in March 2020. Once government recognised the gravity of the situation it created a parallel supply chain to buy and distribute PPE. However, it took a long time for it to receive the large volumes of PPE ordered, particularly from the new suppliers, which created significant risks. There were further difficulties with distribution to providers and many front-line workers reported experiencing shortages of PPE as a result. The initial focus on the NHS meant adult social care providers felt particularly unsupported. Government has budgeted an unprecedented £15 billion of taxpayers' money to buy PPE for England during 2020-21. It has paid very high prices given the very unusual market conditions, and hundreds of millions of pounds-worth of PPE will not be used for the original intended purpose. Our recent report on government procurement in the pandemic sets out the findings of our detailed examination of some PPE contracts.

Lessons to be learned

25 Given the human and financial investment required in a response such as this and the continuing risk of further outbreaks, it is essential that lessons are identified, learned and acted on as swiftly as possible. We recently reported on the commercial aspects of certain PPE contracts, and made recommendations for improving procurement. In taking forward its new PPE strategy, the Department will need to identify lessons that can be learned. Specifically:

³ Department of Health & Social Care, *Personal protective equipment (PPE) strategy: stabilise and build resilience*, September 2020.

- a** The Department and its partners had to oversee and take many unplanned and unprecedented actions to obtain PPE during the emergency. Inevitably, some actions were more successful than others. A comprehensive lessons-learned exercise involving all the main stakeholders, including local government and representatives of the workforce and suppliers, would inform the planning for future emergencies. This should include: consideration of whether any issues with PPE provision or use might have contributed to COVID-19 infections or deaths; how to determine the priorities when there are shortages of essential equipment such as PPE; and, how events are recorded during an emergency response to help learn lessons for the future.
- b** Business-as-usual activities within government need to strike the appropriate balance between operational and financial efficiency versus the longer-term need for resilience and capability for dealing with shocks. For PPE, this includes consideration of the cost implications of, and incentives needed for, developing and maintaining a domestic manufacturing base and increasing diversity in international supply.
- c** Emergency plans for dealing with a pandemic must provide for appropriate stockpiles of high-quality PPE together with comprehensive and resilient arrangements for the rapid procurement and distribution of PPE, based on reliable information. Plans need to include distribution of PPE to social care and all parts of the health system. Organisations responsible for maintaining and testing their plans must actively monitor for new threats that might overwhelm their plans.
- d** Effective governance, lines of accountability, and resourcing responsibilities are important for an effective rapid-response in an emergency situation. Developing these arrangements, and ensuring that they remain up to date, should be part of the emergency plan for activation when required.
- e** Clear, timely, two-way information and communication are vital for both providing services at the front-line and for managing the response at the national level. This includes information on national and local PPE stocks and requirements, and feedback loops. Deficiencies in information on, and communication about, PPE can lead to a breakdown of trust, failure to take effective action, and poor value for money.
- f** Despite efforts to integrate them over the years, health and social care have continued to be separate systems. During this crisis the social care sector was hit hard by shortages of PPE, and government needs to understand why national bodies provided more support to hospitals than to social care and how to prevent that happening again.