

# What can the Defence Medical Services learn from the COVID-19 pandemic in order to be ready for the future?

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## ABSTRACT

The COVID-19 pandemic placed significant global pressure on public health, with the demand for specialist clinical input, equipment and therapeutics often outweighing supply in many well-established healthcare systems. The UK was no exception to this burden, resulting in unprecedented demands being placed on its NHS. Throughout the pandemic, the UK Defence Medical Services (DMS) aided the civilian healthcare sector, while concurrently adapting as an organisation to meet its enduring commitment in promoting the operational output of the wider UK Armed Forces. This paper serves to provide an overview of some of these key activities while offering proposed lessons which can be learnt, in order to promote the DMS' output in times of future crises. Of note, the DMS aided to mitigate surge demands placed on the NHS' supply chain, assisting in promoting its resilience to provide key materials to civilian clinical personnel. Adaptation of military policy generation mechanisms, together with adoption of novel technological approaches to promote remote working, empowered efficient DMS operational output throughout the pandemic. Direct provision of personnel to assist in the NHS' clinical output served to foster mutually beneficial interorganisational relationships, while providing objective benefit for the UK public.

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## INTRODUCTION

COVID-19, caused by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), was first declared a global emergency by the WHO in January 2020,<sup>1</sup> with the UK documenting its first case in February 2020.<sup>2</sup> SARS-CoV-2 is more transmissible compared with other viral acute respiratory syndromes (ARS),<sup>3</sup> with mortality particularly high in those aged 70 years and older.<sup>4</sup> Additionally, an increased proportion of COVID-19 symptomatic patients require hospital admission for supportive respiratory

management compared with previous ARS pandemics.<sup>5</sup> The stress COVID-19 placed on secondary care has been documented to have overwhelmed clinical provision capacity outside of the UK, resulting in a scarcity of resources to adequately manage all patients.<sup>6</sup> Therefore, UK management of the COVID-19 pandemic has centred around a multifaceted strategy aimed at minimising case numbers, in conjunction with researching the best-practice management of, and ultimately vaccination against, the virus.<sup>7</sup> The UK Defence Medical Services (DMS) have implemented a comprehensive suite of support interventions to augment this national strategy, extending beyond the boundaries of clinical care provision alone. This personal view aims to provide an overview of DMS support offered to the UK throughout the pandemic to date, along with key lessons learnt, to promote the DMS' preparedness for potential future challenges.

## SUPPLY CHAIN MANAGEMENT

Personal Protective Equipment (PPE) is effective at preventing the spread of SARS-CoV-2, serving to reduce case numbers while concurrently preserving the functioning of key personnel, such as healthcare workers.<sup>8</sup> NHS demand for PPE rapidly outstripped supply in the early stages of the pandemic.<sup>9</sup> The DMS, in conjunction with the wider Ministry of Defence (MoD), assisted in addressing this deficit through distributing emergency stock from the Pandemic Influenza Preparedness Plan warehouse, serving to bolster the NHS' PPE supply chain. Therefore, the DMS' prior input into contingency planning, specifically with regard to advising on the quantity and versatility of stockpiled PPE, served as an important initial stabilising factor for the NHS' PPE acquisition strategy. Such specialist medical input into emergency planning should continue, in order to most efficiently promote preparedness for future crises.

Management of enduring NHS, DMS and wider MoD PPE requirement proved substantially more complex, demanding a delicate balance of need between these

organisations. A decision was made early on to restrain existing contractual buying obligations, centralising the national PPE procurement effort, in order to prevent acquisition fratricide in an already challenging market. Notwithstanding this aspiration, the use of multiple, isolated requestor mechanisms for clinical equipment within the DMS resulted in incoherent demand signals reaching suppliers. This decreased the ability for the DMS, and the wider MoD, to gain an understanding of true PPE demand which, in turn, diminished the DMS' ability to advise on their PPE requirement from the national buying effort. The conception of the Defence Supporting Operating Centre served to address this governance deficit, providing harmonisation of the strategic Defence PPE demand at an organisational level. Hence, it is essential for the DMS to continue its development of accurate, organisational level, procurement forecast mechanisms to meaningfully contribute to national acquisition dialogue during future crises. Ongoing engagement in strategic governance will play an important role in this, together with adequate investment in updating and unifying existing medical material request mechanisms, and stock-taking tools.

## REMOTE WORKING

Minimising physical contact between individuals susceptible to SARS-CoV-2 infection, for instance through requiring personnel to work from home wherever possible, formed a central facet to the mitigation strategy of COVID-19 spread.<sup>10</sup> The DMS were no exception to this, with remote working rapidly adopted across numerous domains.

In the military primary care space, telephone consultations were embraced for all but essential patient contact episodes. Of note, a similar remote consultation model was adopted within the NHS, the post-pandemic integration of which may improve access to healthcare for some patient populations, alongside persisting access to face-to-face (F2F) consultations.<sup>11</sup> Remote consultations can reduce consultation length and increase patient satisfaction.<sup>12</sup> They can also assist in the effective distribution of finite medical resources within the austere military setting.<sup>13</sup> Additionally, within the DMS, increased focus was placed on the role of remote working tools to facilitate regular communication between members of the clinical multidisciplinary team (MDT). Adoption of such virtual communication methods aided in MDT discussion, enabling multiparty meetings to take place securely

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and with ease. Notwithstanding these apparent benefits, remote communication tools, particularly teleconsultations, may be associated with increased patient safety risk, owing to the inability for the consulting physician to objectively assess the patient's signs.<sup>14</sup> To mitigate this, the DMS implemented an online triage tool to afford clinicians a comprehensive summary of the patient's clinical history, informing the decision as to whether an F2F consultation would be required, or if a telephone contact would suffice. Clinicians were supported in booking patients in for rapid F2F follow-up, should they decide this was appropriate following a telephone consultation. Hence, virtual communication technologies have enabled the DMS to provide continuity in patient care, allocate finite medical resources efficiently and empower holistic patient MDT management while adhering to social distancing legislation. Early recognition of potential patient risk resulting from such a disruptive alteration to standard working practice, and implementation of mitigation factors, ensured patient safety has been promoted throughout. Given the predicted enduring role telemedical capabilities are likely to have within the DMS and NHS going forwards,<sup>13</sup> further objective investigation into the effect remote clinical working has had on the efficiency, equitability of access and effectiveness of care provided would be prudent.

Videoconferencing has been used throughout the pandemic to provide teaching for Combat Medical Technicians, Medical Assistants and Royal Air Force Medics in the context of social distancing legislation. Adoption of this technology has improved uptake, and teaching continuity, of clinical training in a subsector of the military setting, with reduction in travel time to the place of learning cited as a particular reason for this.<sup>15</sup> However, there remains a paucity of evidence exploring whether this improved lesson attendance, facilitated by videoconferencing teaching, resulted in increased knowledge acquisition. Indeed, the barriers such technology places on tutors regarding their assessment of non-verbal student cues, and consequently adapting the speed, depth and content of their teaching, can minimise student learning capacity.<sup>16</sup> Furthermore, synergistic development of practical skills, through F2F training, alongside theoretical knowledge advancement is essential in developing high-quality clinicians.<sup>16</sup> Therefore, while virtual training has enabled a level of continued professional development for junior DMS clinical cadres, it must be

blended with appropriate F2F training. Moreover, further interrogation into its effectiveness in promoting knowledge acquisition, over mere lesson attendance, would be appropriate.

### MEDICAL POLICY

Understanding the effect SARS-CoV-2 had on MoD operational capacity continually, and rapidly, evolved throughout the early stages of the pandemic. Therefore, there was a significant, urgent requirement for the conception and, should evidence dictate, swift alteration of medical policy for the DMS. This demand outstripped generation capacity initially, resulting in stagnation of medical policy creation and distribution. This, in turn, triggered individual commanders to make decisions at the tactical level based on local medical input which were, on occasion, in contravention to contemporary policy yet to be circulated. The initial sluggish medical protocol generation was partly due to the complex path to strategic policy approval.<sup>17</sup> Establishment of the Defence Medical Clearing House (DMCH) aimed to streamline this process, through the creation of a dedicated team whose function was to provide one 'voice' for all Defence assets. This served to improve the efficiency of the policy-conception procedure, rapidly producing documentation that was in close alliance with the unified medical intent of the DMS and wider MoD. The DMS should consider adopting a similar model to DMCH should further rapidly evolving crises present in future, owing to the unifying clarity in direction—coupled with the expeditious generation of novel medical policy—such an organisation promotes.

### MILITARY ASSISTANCE TO CIVIL AUTHORITIES

Military Assistance to Civil Authorities (MACA) taskings describe the operational deployment of the Armed Forces, within the UK, in support of civilian agencies. DMS personnel have assisted multiple civilian organisations throughout the pandemic. Notably, this has included providing medical planners to assist the NHS in their delivery of seven Nightingale Hospitals, providing a surge capability in the UK's Critical Care capacity.<sup>18</sup> The symbiotic relationship established between NHS staff and military planners fostered an environment of mutual learning. Specifically, NHS staff provided military personnel with an insight into the complexities of large-scale workforce management, and the projected staffing

requirements of the Nightingale Hospitals. This, in turn, highlighted the need for all Nightingale Hospitals to be constructed in areas of high population density, to ensure personnel needs were met. Concurrently, military planners were able to integrate previous lessons learnt from the construction of hospitals in conflict zones. In particular, this regarded implementing a compartmentalised internal design for all Nightingale Hospitals, owing to the benefits this would afford the locations with regards to scalability.<sup>19</sup> Consideration of the DMS-specific input into the construction of the Nightingale Hospitals reinforces the beneficial role the military-medical sector can have in the empowerment and support of civilian organisations. Central to this is recognition of the importance of a harmonious NHS–DMS relationship, with ownership of the civilian health-related problem lying with the NHS, while being supported by the DMS.

In addition to providing specialist higher-level input, DMS personnel have served to increase key national clinical output when required. This included providing clinical staff to bolster NHS Critical Care transfer capability,<sup>20</sup> and more recently the provision of manning to increase vaccination patient throughput as part of the UK's COVID-19 immunisation programme.<sup>21</sup> While the latter of these taskings has enabled an increase in the UK's vaccination capacity, it has concurrently resulted in substantial amounts of DMS personnel being held 'at readiness' for prolonged periods. A common theme throughout the pandemic, this results in decreased opportunities for rest and, as such, can lead to cohort fatigue and have detrimental effects on workforce mental health, which may be exacerbated by isolation associated with social distancing regulations.<sup>22</sup> DMS clinical personnel can provide a useful surge capability to civilian healthcare output. However, holistic consideration of the duration individuals have been held 'at readiness' for must play a central focus on personnel management during such prolonged tasks. DMS personnel managers should demonstrate an awareness of the potential need for additional well-being checks within such groups.

### CONCLUSION

The DMS have facilitated a comprehensive, integrated support approach to the UK's response to the COVID-19 pandemic. While not an exhaustive summary of lessons learnt, this personal view attempts to signpost the reader to

the most salient DMS development points from the COVID-19 crisis, to enable it to be best prepared for future challenges. The DMS' initial input into the NHS' supply chain assisted to promote clinical output during the early phases of the pandemic. Additionally, direct assistance to augment NHS personnel requirements, through MACA taskings, promoted mutually beneficial interdepartmental relationships and the public health of the UK civilian population. The DMS' rapid streamlining of policy generation, and incorporation of relevant technology to aid in remote working practices, served to protect operational output.

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