COVID-19: responding to a pandemic on Operation TORAL

Stacey Webster,[1,2] A Gough ,[3] M R Riley ,[4] S Makin [4]

ABSTRACT

Operation TORAL was the UK's contribution to NATO's Operation RESOLUTE SUPPORT in Kabul, Afghanistan. Approximately 1000 British troops were deployed in Kabul when the arrival of the COVID-19 pandemic in Afghanistan was declared. This article will describe the challenges faced due to COVID-19 in Kabul.

Medical planning considerations, occupational health issues, implementation of behaviour change and operating as part of a multinational organisation are all discussed, with challenges encountered detailed and potential solutions offered. The use of a suggested framework for ensuring the medical estimate process covered all areas relevant to an emerging viral pandemic —the 4Ds and 4Cs approach—proved particularly useful in the early stages of the pandemic in Afghanistan.

INTRODUCTION

On 11 March 2020, the WHO declared COVID-19 a pandemic.[1] This public health crisis was to have repercussions across the world, and military operations would not be spared.

Operation TORAL was the UK's contribution to Operation RESOLUTE SUPPORT (RS), a NATO-led, non-combat mission in Afghanistan to train, advise and assist Afghan forces in rebuilding and stabilising their country. Around 1000 British troops were stationed in Kabul at the onset of the COVID-19 pandemic.[2]

Responding to an emerging and evolving pandemic while deployed presented a number of challenges. How these challenges were approached and met provides an insight into how robust force health protection measures can enable core operational outputs to continue. This approach includes preservation of the fighting force and protection against overwhelming medical care when a 'lockdown' is not a viable alternative.

[1]Academic Department of Military Emergency Medicine, Royal Centre for Defence Medicine (Research & Academia), Birmingham, UK
[2]Emergency Department, University Hospitals Plymouth NHS Trust, Plymouth, UK
[3]16 Medical Regiment, Merville Barracks, Colchester, UK
[4]Academic Department of Military General Practice, Royal Centre for Defence Medicine (Research & Academia), Birmingham, UK

Correspondence to Major Stacey Webster, Emergency Department, University Hospital Plymouth, Plymouth, PL6 8DH, UK; stacey.webster@doctors.org.uk

CONTEXT

Afghanistan recorded its first case of COVID-19 in mid-February 2020.[3] The country faced a serious challenge in its response: a weak public health system, widespread poverty and instability. In Kabul, more than half of the city's five million residents were estimated to have been infected by August 2020 according to the Afghan Ministry of Public Health.[4] Set among this was a NATO force frequently working closely with the local population; the risk of transmission was therefore readily apparent.

Modelling how the disease could spread through a dispersed but connected and heterogeneous operational population (not exclusively military personnel as approximately 50% were contractors) was challenging. One of the first insights into how COVID-19 could affect military operations was the widely reported COVID-19 outbreak on the aircraft carrier USS Theodore Roosevelt in March 2020. The outbreak shone a spotlight on how rapid widespread transmission could occur within a 'confined space congregate environment', comparable with static military bases, including those found in Kabul.[5]

The outbreak on the USS Theodore Roosevelt was further characterised by asymptomatic spread, highlighting the challenge of detecting COVID-19 cases within a younger, mostly healthy, adult population. The effectiveness of symptomatic screening in reducing transmission was felt likely to be limited without additional non-pharmaceutical interventions such as cohorting (isolation and quarantine), social distancing, wearing masks and surveillance testing.[5] In contrast to the tightly controlled maritime environment, Kabul had additional challenges of more porous camps with local interaction. These interventions along with restrictions on movement into and within theatre were often referred to as a 'layered defence'. The connectivity between bases meant that the impact of any outbreak, without implementation of any measures, was likely to rapidly affect bases across the area of operations.

COVID-19-related hospitalisation and mortality were recognised early as being strongly associated with an increasing age, particularly in those aged over 60.[6] With 16 551 coalition troops deployed on the NATO mission in Afghanistan as at February 2020, the importance of preventing widespread community transmission remained paramount when considering that even a small percentage of this large force requiring hospitalisation and critical care could potentially overwhelm capacity in the deployed medical treatment facilities.[7]

Despite disease and non-battle injury being the the most common cause of morbidity on military operations, it rarely places a significant burden on deployed hospital care, which tends to be configured towards management of traumatic injuries.[8] As a novel and emerging threat, COVID-19 was not specifically planned for, although planning for infectious disease outbreaks had taken place during pre-deployment planning and training. Factors that had to be considered as part of a revised estimate process are outlined in Table 1 and are summarised under the four 'D's: distance, demand, duration and destination; and four 'C's: capability, capacity, convenience and continuity.[9] Rapid reach back capability to expert advice in public health and infectious diseases with this novel threat proved invaluable in the development of the medical plan in a rapidly evolving situation.

OPERATIONAL OCCUPATIONAL HEALTH LIMITATIONS

Implementation of non-pharmacological interventions to slow the spread of COVID-19 has been a common strategy worldwide, with the effect of protecting health systems from being overwhelmed.[10] As well as measures to slow and stop the spread of disease, planning had to consider overwhelming of available resources and the population at risk. All UK military personnel due to deploy overseas must meet clinical criteria outlined in the Joint Service Manual of Medical Fitness.[11] They are then assigned a grade of Medically Fully, Limited or Non-Deployable (MFD, MLD, MND), as described in Army Medical Employment Policy.[12] Those who are MLD are then assessed for suitability to deploy to a specific operational theatre.

The medical officer has a strong understanding and influence over the medical fitness of UK personnel entering an operational theatre. However, most recent operations to which the UK has contributed have involved multinational militaries

Table 1 The '4Ds and 4Cs' framework was used to explore planning considerations in the medical response to the emergence of the COVID-19 pandemic during Operation TORAL

Distance	► Dispersed force, often dislocated from deployed hospital care.	Capability	► Reconfiguration of hospital care from a trauma-focus to managing large numbers of patients needing critical care, such as non-invasive or invasive ventilation for complications of COVID-19.
Demand	► Unique population and environment make it challenging to generalise modelling and anticipate health service support demand.	Capacity	► Intensive care and ward beds. ► Ventilators and ancillaries. ► Medicines. ► Specialist medical personnel. ► Training of non-medical providers to assist.
Duration	► COVID-19 anticipated to be a persistent threat for several months at least, until herd immunity is reached, either through continued community transmission or immunisation.	Convenience	► Testing: a novel coronavirus, no in-theatre diagnostic tests being immediately available, delaying case confirmation. ► Reliance on an air-bridge for resupply.
Destination	► Increased requirement for isolation and quarantine facilities. ► Asymptomatic or mild cases may require evacuation out of theatre to reduce caseload and maintain a short-hold isolation capacity. ► Critically unwell patients evacuated back to (potentially) overwhelmed or stretched home nation healthcare.	Continuity	► PPE 'burn rate'—conservation strategies. ► Oxygen—increasing availability of oxygen concentrators or generating capability to ensure continuity of supply. ► Personnel—continued demand on limited medical personnel, particularly 'pinch-point' specialists, such as critical care—leading to exhaustion of staff.

and their contractors, each grouping having its own acceptable deployment standards. In Camp Qargha (a former ISAF base in Kabul) in early 2020, only approximately one-third of all personnel were UK military, with more than six other nations represented, diverse civilian contractors and over 30 local nationals in roles including translation and maintenance. The Defence Medical Information Capability Programme (DMICP), the UK electronic medical record system, provides not only medical grading but also complete medical notes for UK personnel. For non-UK personnel, often no medical background information is available. As COVID-19 became better understood, medical conditions that made individuals at risk of critical illness were published, resulting in some deployed personnel no longer being fit to remain in theatre.[13] The lack of a common electronic medical record system created challenges in identifying newly at risk individuals unless they presented themselves to disclose this information.

Operation-wide individual risk assessment forms distributed by RS command chains were mandatory for military personnel and optional for civilian contractors. This facilitated an operation-wide risk assessment of every individual but created issues of medical confidentiality. RS was a predominantly US-led mission and had different medical and legal constructs of confidentiality with both Caldicott Principles and the EU's General Data Protection Regulation (GDPR) being more restrictive than US policy.[14 15] Each RS Nation has independent legislation on confidentiality and consent. UK medico-legal standing was that patients must consent to their individual data being released irrespective of nationality. A Caldicott guardian advising the chain of command was as necessary deployed, as in the firm base.

The theatre COVID-19 risk profile necessitated risk mitigation measures to ensure there was capability to adequately treat all medically eligible personnel. For individuals deemed at higher risk, mitigation measures included repatriation. A list of priority trades and taskings considered the changing mission in Afghanistan; non-essential personnel were also assessed for repatriation in line with an overall reduction in personnel. In April 2020, a new UK Defence Instructional Notice outlined the classification of individuals into deployable, vulnerable or extremely vulnerable risk groups.[16] This was parallel and in conjunction to local and RS risk assessments.

The changing occupational health landscape required a rapid change in focus by the local medical team, the multinational team in RS and from a UK perspective in PJHQ. All had different objectives, which needed to be harmonised to achieve common acceptability. Frictions needed to be understood and mitigated against to achieve an acceptable consent and confidentiality process. Data collection to understand risk profile and resource requirements allowed for recognition of at-risk and non-essential personnel to be identified for repatriation, reducing RS population and therefore potential clinical burden.

BEHAVIOUR CHANGE AND COVID-19 ON OPERATIONS

With non-pharmacological interventions being identified as key to limiting COVID-19 spread in confined operational settings, it is important to acknowledge that this runs counter to usual human behaviour. A command-led effort informed by advice from the medical team was used to ensure effective non-pharmacological intervention implementation.[5]

COVID-19 is not the first viral pandemic to affect military operations. In the 1918–1919 influenza pandemic, more than a quarter of the American military force, some 1 000 000 troops, developed influenza, of whom 30 000 died before ever reaching Europe due to outbreaks occurring in their training establishments.[17] To combat this, medical officers recommended what would have been recognised today as non-pharmacological interventions, but this was largely impossible to achieve due to overcrowding. The result was more troops dying of a viral illness than as a result of battle injuries.[17] As in 1918, the absence of a vaccine meant non-pharmacological interventions were the only option for minimising COVID-19 cases on Operation TORAL.

Non-pharmacological interventions were challenging to implement in Kabul; much of the accommodation was multi-occupancy, dining facilities were originally designed to have troops sit shoulder-to-shoulder, and it was not possible to socially distance in armoured vehicles. Decisions regarding quarantining of potential close contacts could lead to a significant disruption to manning as a whole and also critical roles and personalities. This all served to create tension between the troops, the chain of command and the deployed medical team. A balance had to be struck between precautions which prevented a COVID-19 outbreak and maintaining operational effectiveness.

Command-led behaviour change in infectious disease mitigation has been seen in other campaigns. During the Burma campaign of WW2, Field Marshal Slim enforced medical countermeasures to malaria by dismissing commanding officers of units with poor compliance on random inspection, dramatically reducing malaria rates.[18] The threat and use of administrative action on Operation TORAL were effective in improving compliance with social distancing measures. Similar to fines issued by police to civilians in the UK, sanctions could become more severe with repeat offences.[19] The medical team supported behaviour change through outbreak investigation, identifying behaviours that might increase the spread of COVID-19. For example, the 'Chasing the Chicken Wings' phenomena, where individuals would visit numerous dining facilities in pursuit of their meal of choice, often chicken wings, with the unintended consequence being a dramatically increased contact-trace and uncontrolled COVID-19 spread in some theatre locations through the dining facilities. This information fed back to the chain of command informed further behaviour change measures.

Behaviour change on Operation TORAL was primarily achieved through enforcement of the rules. Yet, while COVID-19 was a significant threat to force health, it was not the only threat. Young service personnel in relative isolation found non-pharmacological interventions came at a psychological cost. This was witnessed in the UK too, with significant changes in rates of mental illness reported during the pandemic.[20] Similar success at COVID-19 prevention may have been achieved with less psychological impact through application of the EAST behaviour change model now endorsed by the MOD and the Cabinet Office. This model advocates making behaviour change; 'Easy' through simpler messaging, 'Attractive' via rewards as well as sanctions, 'Social' by emphasising the benefit to others through good individual behaviour, through 'Timely' delivery of the behaviour change messaging.[21 22]

LIMITATIONS

As a descriptive account of the challenges encountered and lessons learnt from managing a novel global pandemic in the deployed setting, this paper has several limitations. Although similar principles may apply in other deployed settings, RS was primarily a non-combat operation and therefore risk appetite from the chain of command may differ in what would be acceptable. The Independent Scientific Pandemic Insights Group on Behaviours (SPI-B) provides expert behavioural science advice to SAGE. They provide an evidence-based behavioural change model to support governmental policy and strategy (the EAST model). The rapidly evolving situation in Kabul demanded making quick decisions based on limited information, and no formal behavioural change model was implemented or analysis made. This should be considered in future.

CONCLUSION

NATO and allied countries work on a common approach to multiple aspects of military interaction in areas such as communications, design standards and equipment standardisation. While there is an Allied Joint Publication on Medical Support (AJP-4.10) regarding doctrine, this is not the case for medical expectation, employment standards and record keeping. The implications of this, both for patient care and the operational context, should be carefully considered.

Box 1 Key lessons

- ⇒ Multiple vectors (local population and rotating troops) mean operations are not isolated from importation of diseases. Non-pharmacological interventions are key to reducing burden on deployed medical care.
- ⇒ The use of non-pharmacological interventions can be perceived as a friction on operations but should rather be seen as enabling operations to continue.
- ⇒ An emerging disease may require a comprehensive review of the medical plan, the 4Cs and 4Ds approach is a useful handrail.
- ⇒ Medical standards for deployment can be subject to change, reflecting emerging health threats and also capacity of deployed medical care to support individuals with increased medical support requirements.
- ⇒ Medically necessary behaviour change can run counter to human instinct. Using the EAST model in future pandemics may prove superior to command-led enforcement alone.

One hundred years ago, the Spanish influenza was the last pandemic that had a major effect on the fighting force and military operations. This article describes the challenges of managing a pandemic in the current deployed operational setting and aims to capture lessons learnt for use in future pandemics (box 1).

Contributors SW initiated the idea. SW, AG, SM and MRR wrote and reviewed the paper.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Not applicable.

Provenance and peer review Not commissioned; externally peer reviewed.

To cite Webster S, Gough A, Riley MR, *et al*. *BMJ Mil Health* 2023;**169**:475–478.

Received 16 June 2021
Accepted 28 September 2021
Published Online First 8 October 2021

BMJ Mil Health 2023;**169**:475–478.
doi:10.1136/bmjmilitary-2021-001911

ORCID iDs
A Gough http://orcid.org/0000-0001-7509-904X
M R Riley http://orcid.org/0000-0002-1914-144X
S Makin http://orcid.org/0000-0003-4137-4095

REFERENCES

1 Adhanom T. WHO Director-General's Opening Remarks at the Media Briefing on COVID-19 - 11 March 2020 [Internet], 2021. Available: https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19-11-march-2020 [Accessed 13 Feb 2021].
2 Ministry of Defence. Army Deployments: Afghanistan [Internet], 2021. Available: https://www.army.mod.uk/deployments/afghanistan/ [Accessed 13 Feb 2021].
3 Mousavi SH, Shah J, Giang HTN, *et al*. The first COVID-19 case in Afghanistan acquired from Iran. *Lancet Infect Dis* 2020;20:657–8.
4 Cousins S. Afghanistan braced for second wave of COVID-19. *Lancet* 2020;396:1716–7.
5 Alvarado GR, Pierson BC, Teemer ES, *et al*. Symptom characterization and outcomes of Sailors in isolation after a COVID-19 outbreak on a US aircraft carrier. *JAMA Netw Open* 2020;3:e2020981. doi:10.1001/jamanetworkopen.2020.20981
6 Verity R, Okell LC, Dorigatti I, *et al*. Estimates of the severity of coronavirus disease 2019: a model-based analysis. *Lancet Infect Dis* 2020;20:669–77. doi:10.1016/S1473-3099(20)30243-7
7 Special Inspector General for Afghanistan. Quarterly Report to the US Congress [Internet], 2020. Available:

https://www.sigar.mil/pdf/quarterlyreports/2020-04-30qr.pdf
8 Bailey MS. Medical and DNBI admissions to the role 3 field Hospital at cAMP Bastion during operation Herrick. *J R Army Med Corps* 2016;162:76–7.
9 Development C and DC. *Development C and DC. joint doctrine publication 4-03: joint medical doctrine*. London, 2011.
10 Han E, Tan MMJ, Turk E, *et al*. Lessons learnt from easing COVID-19 restrictions: an analysis of countries and regions in Asia Pacific and Europe. *Lancet* 2020;396:1525–34.
11 Defence Mof. Leaflet 6-6-7: Joint Service Manual of Medical Fitness. In: JSP 950 Medical Policy [Internet]., 2021. Available: http://data.parliament.uk/DepositedPapers/Files/DEP2019-0604/Joint_Service_Manual_of_Medical_Fitness.pdf
12 Defence Mof. Chapter 78: Army Medical Employment Policy. In: Army General and Administrative Instructions Volume 2 [Internet]., 2019. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/851547/Electronic_version_of__Army_general_Administrative_Instruction_Volume_2_Chapter_78__published_in_March_2019___2019__09279_10_04.pdf
13 NHS. Who's at higher risk from coronavirus [Internet], 2021. Available: https://www.nhs.uk/conditions/coronavirus-covid-19/people-at-higher-risk/whos-at-higher-risk-from-coronavirus/
14 UK Caldicott Guardian Council. The Eight Caldicott Principles [Internet], 2020. Available: https://www.ukcgc.uk/manual/principles
15 Information Commissioner's Office. Guide to the General Data Protection Regulation [Internet], 2018. Available: https://www.gov.uk/government/publications/guide-to-the-general-data-protection-regulation
16 Ministry of Defence. *Defence instructional notice 04-57*. London, 2020.
17 Byerly CR. The U.S. military and the influenza pandemic of 1918–1919. *Public Health Rep* 2010;125:81–91.
18 Houston DJK, Tuck JJH. Malaria on a military peacekeeping operation: a case study with no cases. *Mil Med* 2005;170:193–5.
19 Coronavirus (Covid-19) police powers [Internet]. Metropolitan Police Advice and Information, 2021. Available: https://www.met.police.uk/advice/advice-and-information/c19/coronavirus-covid-19/coronavirus-covid-19-police-powers/
20 Carr MJ, Steeg S, Webb RT, *et al*. Effects of the COVID-19 pandemic on primary care-recorded mental illness and self-harm episodes in the UK: a population-based cohort study. *Lancet Public Health* 2021;6:e124–35.
21 Hallsworth M, Halpern D. EAST: Four simple ways to apply behavioural insights [Internet]. The Behavioural Insights Team. [cited 2021 Aug 28], 2021. Available: https://www.behavioursinsights.co.uk/wp-content/uploads/2015/07/BIT-Publication-EAST_FA_WEB.pdf
22 Senior Health Advisor Army. *Force health protection instruction: working safely in a COVID-19 environment version 16*, 2021.