Medical supply on contingency military operations: experience from Operation GRITROCK

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Abstract

Medical supply during military operations has the ability to affect the efficacy of the operation being undertaken, either negatively or positively. An appropriately-managed maritime platform with a robust medical supply chain during transit and on arrival in theatre is the main aim. A secure supply chain will reduce any implications that logistics may have with regard to capability, and negate the effects of deficiencies of short shelf life items occurring over time and during use in high tempo operations.

Introduction

Op GRITROCK represented the United Kingdom's (UK) military operation in Sierra Leone in co-ordination with the Department for International Development (DfID) and the United Nations Mission for Ebola Emergency Response (UNMEER). The aim was to help reduce the spread of infection of Ebola Virus Disease (EVD) and aid in the recovery, providing stabilisation, training and a level of medical support.

To meet the operation's key targets there was a heavy reliance on rapid logistical support for the transport of medical supplies to several units in theatre, including Royal Fleet Auxiliary (RFA) ARGUS, the Role 2 (R2) medical treatment facility ashore, and the Kerry Town Treatment Unit (KTTU). This involved civilian contracts and the utilisation of various MOD assets. The logistical support to the operation was in stark contrast to the well-developed air bridge seen on Op HERRICK in recent years, which was characterised by the rapid deployment of supplies and limited re-supply waiting times.

Pre-deployment

Prior to deployment, RFA ARGUS was maintained with medical equipment held within the Tri-Service medical modules on board to provide for the treatment of 40 Disease Non-Battle Injury (DNBI) patients in the Emergency Department (ED), sixteen surgical cases in theatres, the care of eight ventilated Intensive Care Unit (ICU) patients for 48 hours, and 25 ward patients.

This enabled ARGUS to provide the two ED bays, one operating table, two ICU beds and the ten-bed ward facility required for contingency operations in the Joint Operations Area (JOA). The modules were maintained as well as feasibly possible with the manpower available on board; however, due to ARGUS's rapid deployment there was an initial overall capability deficiency of around 40%. The more significant deficiencies included the quantities of controlled drugs, the potential effect being that the number of theatre cases would need to be reduced due to the supplies available. The logistics team aimed to rectify all of these deficiencies in the four days prior to sailing.

One issue was the timing of the decision regarding the embarkation and deployment of the Primary Casualty Receiving Facility (PCRF), as opposed that of the aviation support, which resulted in a delay in medical materiel being issued to the PCRF prior to deployment.

Transit

On sailing from Falmouth, the dynamic of the supply chain changed as it was confirmed and realised that the vessel was deploying as an aviation support ship with a contingency role of providing medical support to UK troops and other Non-Government Organisations (NGOs) within the JOA. As RFA ARGUS sailed from Falmouth the dynamic of the supply chain varied, first with the realisation, then with confirmation, that the ship was in fact deploying in support of air operations, with a contingency role of providing medical support to UK troops and other Non-Government Organisations (NGOs) within the JOA.

The supply chain was heavily supported by Defence Equipment and Support (DES); the teams at Abbey Wood and at Logistics and Commodities Service Donnington were able to provide the rapid assembly and co-ordination of essential medical supplies needed for the vessel to reach

full operating capability. The first test of this system was the dispatch of critical medical supplies, including blood products, to Gibraltar to meet the ship in transit.

Further work was co-ordinated centrally and conducted by on-board departments to ensure that modular holdings and their associated databases were as accurate as possible. This enabled the identification of any critical errors, deficiencies or adjustments to command, and subsequently resulted in the submission of critical demands via the logistics chain. This work ensured that the ship could, on arrival in the JOA, declare the required capability with enough resilience within the medical modules to provide a second line of supply.

Joint Operations Area (JOA)
Once in theatre, and with a slower operational tempo than expected, larger tasks that had been postponed were undertaken, such as a review of the electronic databases, which are relied upon for the routine maintenance of the medical modules while operations are in a dormant state.

This rationalisation helped to highlight issues and deficiencies aboard ARGUS, such as the lack of a formalised and effective pharmacy module (further work has subsequently been undertaken to address this). It also provided a measure for the efficacy of the supply chain while on contingency operations, with the added challenge that the ship remained at sea off the coast of Sierra Leone.

A suitable airhead was identified at Lungi Airport, and regular scheduled flights were available to support the DfID contract, which was providing building supplies for the creation of EVD treatment centres within theatre. This mode of supply added a further complication, as space on these flights had to be bid for, and was allocated, in order of priority, by defence movements and freight services in conjunction with DfID. This initially led to a substantial delay in the supply pipeline as medical materiel was pushed down the priority list. This delay was acceptable, given the tempo of the operations, but this might have been subject to change at any point.

Once the bulk of the building work was finished, the supply chain maintained, on average, a two-week turnaround for demands submitted via the routine operational logistics system.

Statistics
An example of the workload of the supply chain during the operation is given below:

- 1064 lines demanded
- 891 lines delivered
- Routine two-week chilled item standing order maintained on schedule
- 35 demands outside the two-week average supply window
- 153 Golden Hour boxes received in and returned from theatre
- Zero temperature breaches during transport

Lessons identified
One of the major lessons identified during the operation related to the forwarding of medical materiel from RFA ARGUS to forward operating sites such as remote laboratories and the R2 facility ashore. This R2 facility provides an intermediate level of care to stabilise a patient before forwarding to a more advanced unit for specialist or more in depth care such as the Role 3 (R3) hospital unit on board RFA ARGUS. A key aspect identified was the inability to recondition Golden Hour boxes to a suitable state. These are medical containers which house a thermal core and are used to transport chilled or frozen medical supplies. The thermal core can require freezing to -65 degrees Celsius, but there was no equipment available on ARGUS capable of doing this.

A second key factor identified during deployment was the lack of a formalised dispensary module. A module was scoped to provide the materiel needed for 25 simple patient discharges, based on a three-day supply of medication. This module would result in no depletion of the departmental modules and would also provide additional oral medications not currently found in the modules, bringing dispensing up to the same standard expected in the National Health Service.

The third issue identified was that there was no second-line resupply facility attributed to ARGUS. This did not develop into a problem during the deployment because of the resilience within the modules, although in higher tempo operations a requirement for a robust second-line supply might have developed. The logistic supply chain established in theatre proved to be more than suitable for the provision of second-line supply from the UK, with flights scheduled to arrive on average once every 24 hours.

Finally identified was a lack of overall storage space aboard ARGUS to facilitate effective stores management during a higher-tempo operation; this may be a consideration in future, but it had no detrimental effect on Op GRITROCK.

Summary
The supply chain established by DES utilising Lungi Airport as its point of departure enabled the efficient transfer of urgent medical supplies to ARGUS. This is a clear demonstration of the robust medical supply chain available while on contingent operations and was exploited further by embarked units, enabling the ship to act as a leapfrog platform and thus providing forward operating positions with a robust supply chain.

It should be noted that not all contingent operations will require the sheer amount of materiel that was needed during Op GRITROCK; nor will they have available facilities such as a viable airhead, embarked units, and long-range transport. However, the management of the theatre supply chain during GRITROCK demonstrated what can be achieved, enabling the platform to operate as effectively as possible while deployed, maintaining her primary role and remaining at Full Operating Capability (FOC) at all times.

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