Travel Medicine and Infectious Disease (2016) 14, 131–136

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevierhealth.com/journals/tmid

Gastro Enteritis in a military population deployed in West Africa in the UK Ebola response; was the observed lower disease burden due to handwashing?

J.J.H. Tuck*[,1], J.R. Williams [2], A.L. Doyle [3]

HQ Combined Joint Inter Agency Task Force, Operation GRITROCK, British Forces Post Office 609, United Kingdom

Received 6 August 2015; received in revised form 11 December 2015; accepted 14 December 2015
Available online 12 January 2016

KEYWORDS
Travellers;
Gastrointestinal;
Disease;
Health;
Protection

Summary *Background:* Travellers' diarrhoea in military populations is reported ranging from 50 to 70 cases per thousand person months. The UK personnel deployed to the Ebola Outbreak in Sierra Leone during the Ebola outbreak adopted standard measures associated with disease prevention. As part of the infection control measures against transmission of Ebola, personnel also rinsed their hands frequently in 0.05% hypochlorite. This was felt to have reduced the incidence of travellers' diarrhoea in the population and an audit was carried out to test this hypothesis.
Methods: Routine data identified diarrhoea and vomiting cases. A questionnaire sought information on traveller's diarrhoea and hand hygiene in Sierra Leone and Afghanistan.
Results: The incidence of Gastro Intestinal Disease for the population ranged from 23.9 Per thousand personnel per month to 74.4 per thousand personnel per month (mean 55.1 cases per thousand personnel per month). This included 4 headline outbreaks which accounted for 156 of the total number of 243 cases in the period of the deployment. The mean daily number of hand washes in Sierra Leone as reported in a survey was 17.02 (SD 8.2) and for Afghanistan was 9.06 (6.88). The mean difference was 7.94 (t 0.64 $p < 0.0001$.)
Conclusion: The gastro intestinal disease incidence appeared to be at the lower end of the range reported by other groups in an environment with, arguably, a greater risk of infection. Force health protection policies were similar between Sierra Leone and Afghanistan excepting

* Corresponding author. Tel.: +44 7793046394.
E-mail address: Jjhtinsl2014@gmail.com (J.J.H. Tuck).
[1] Now at the office of the Director Medical Policy and Operational Capability, Floor 6, Zone E, Ministry of Defence, Whitehall, London SW1A 2HB, United Kingdom.
[2] Now Senior Medical Officer, 4 Armoured Medical Regiment, New Normandy Barracks, Aldershot, GU11 2LZ, United Kingdom.
[3] Now at Defence Environmental Monitoring Unit, Former Army Staff College, Slim Road, Camberley, Surrey, GU15 4PQ, United Kingdom.

http://dx.doi.org/10.1016/j.tmaid.2015.12.009

the frequency with which hands were rinsed or washed. We recommend that hand washing stations are placed at every office and communal area and not just at the dining facility in order to minimise the incidence of travellers' diarrhoea on future operations.

1. Introduction

An ever present risk to health for travellers around the globe is diarrhoeal illness [1]. Within this travelling population, the military makes up a small but specific sub set and deployed military populations are persistently affected by diarrhoeal illness [2,3] and historically the burden of diarrheal illness has been one of the principle clinical drivers [4]. There are publications that describe the aetiology of the disease and point to how improved knowledge, attitude and practice can affect attack rates [5—8]. Despite this, diarrhoea and vomiting consistently fall in the top five presentations for the deployed healthcare services that have supported recent operations in Iraq and Afghanistan [9—11] and can become more of an operational issue rather than a personal inconvenience requiring hospital level response [12]. In addition, while most papers outline presentations at treatment facilities as the metric for diarrhoeal illness, investigating the burden of gastro intestinal illness that is not presented would suggest that the incidence is far higher and that most sufferers of travellers' diarrhoea self-manage the condition [13,14].

The outbreak of Ebola Virus in West Africa was declared by the World Health Organisation to be a public health emergency of international concern [15]. This prompted a global response which saw large numbers of international healthcare workers and enabling staff deploy to the three countries principally affected. In Sierra Leone, the UK Government deployed a Joint Inter Agency Task Force (JIATF) comprised civil servants and a military element of some 800 personnel from all three Services.

Protection of task force personnel from the risk of contamination with Ebola was the key priority. However, the risk of contracting other communicable diseases was to the fore and all personnel were reminded regularly of the need to pay close attention to health protection processes and practices.

Health protection practice specific to working in an Ebola Virus environment saw the use of 0.05% chlorine solution for hand cleansing on entry into every public building and many private houses. In addition, for the members of the JIATF, hand washing facilities were also set up outside every office and communal space which every member of the deployed population was directed to use (with compliance being monitored.) This led to individuals washing their hands very frequently; more frequently perhaps, than on previous operations and it was subsequently noticed, even in the presence of well-defined clusters of gastro intestinal disease, the burden of diarrhoeal illness for the whole force seemed to be lower than that published in peer reviewed journals.

2. Aims

The aims of this paper were to audit the disease burden of gastro intestinal disease on a military operation in Sub Saharan West Africa, review health protection measures and discuss implications.

3. Methods

This was a 3 element audit using routine primary care morbidity surveillance data, a questionnaire-based, anonymous assessment of hand washing compliance with an opportunity to report self-treated episodes of gastro intestinal disease and a comparison of hand washing compliance on operations in Afghanistan.

Over the duration of the deployment, surveillance was undertaken looking at a matrix of symptoms, signs and primary care diagnoses which were recorded by deployed medical staff as Gastro Intestinal Disease. In addition, in order to see if exposure to 0.05% Hypochlorite solution had an effect on skin complaints, data were selected from dermatological conditions. These data were routinely reported back to the United Kingdom where they were integrated into the enduring surveillance data set where comparisons could be made with other operational deployments.

The questionnaire-based assessment was undertaken amongst the deployed population in three of the 10 shore-based locations. The three locations were chosen for geographical reasons being the most easy to get to and administer the questionnaire. They also contained the greater proportion of the deployed population. The questionnaire was anonymous, sought basic demographic detail, asked about self-treated episodes of gastro intestinal disease and asked specifically about hand washing in the 24 h prior to completing the questionnaire. Those who had served in Afghanistan were also asked to remember how many times a day they washed their hands on an average day on that deployment. The survey was conducted over the period 14—21 Dec 2014.

4. Results

4.1. Routinely collected data

The total number of cases reported over the period Oct 14 to May 15 population was 243. Of these, 156 were generated by four specific clusters (two showing distinctly on the surveillance graph and two less distinct clusters which were identified by deployed Environmental Health Specialists) and 87 were individual (background) cases presenting at