

COVID-19 outbreak in a vaccinated deployed military population

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COVID-19 continues to threaten deployed forces, through both the physical illness and consequent isolation.¹⁻³ It may have been hoped vaccination would reduce the impact of COVID-19 on deployed forces.⁴ However, this may not be the case. This report describes an outbreak among a vaccinated population. The outbreak is of further interest as few of the patients experienced the big three COVID-19 symptoms.

Twenty-six UK service personnel (SP) deployed to a remote location in West Africa in July 2021. Upon arrival in the country, all SP were isolated in households of six to seven; to leave isolation, SP had to perform a negative PCR COVID-19 test after 7 days in isolation.

Once in the location, the 26 SP were accommodated in 10 rooms spread across three buildings. There was one communal dining room where everyone ate together. During the day, the teams worked outdoors teaching a partner force across two sites.

One month after arrival in the location, a COVID-19 outbreak occurred. Fifteen of 26 SP contracted COVID-19. Thirteen cases were confirmed by PCR. Two SP tested negative on PCR but were classed as cases as they had very similar symptoms to all PCR-confirmed cases. It is unclear exactly where the outbreak came from, the first case was in a member of the sustainment team who interacted with contractors and occasionally visited the market to buy food. It is very unlikely that it had come from the UK as there was no contact with anyone from the UK in the preceding month. It is also unlikely that it had come from the training audience as they all tested negative on lateral flow test 2 days after the outbreak started.

Of the 15 cases, 11 were double vaccinated, (14 with AstraZeneca and 1 with Pfizer), the remaining 4 had had at least one dose of vaccine. All double-vaccinated SP only had 4 or 5 weeks between their vaccinations. All SP received their last vaccine at least 5 weeks before infection.

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The two PCR-negative cases had received their last vaccination over 20 weeks ago. **Table 1** shows vaccination status and symptoms.

These results confirm double-vaccinated SP can have a symptomatic COVID-19 infection and infect others. Although no

Table 1 Vaccination status and symptoms of all UK SP

Case	Symptoms	Doses	Type	First vaccination	Second vaccination	Had COVID-19 before	Weeks between vaccination	Time since last vaccination
Case 1	Generally unwell, sore throat, runny nose, loss of sense of taste after 8 days	2	AstraZeneca	06 May 2021	04 Jun 2021	No	4	9
Case 2	Generally lethargic, decreased exercise tolerance, nasal congestion	2	AstraZeneca	22 Apr 2021	27 May 2021	No	5	10
Case 3	Generally unwell, slight headache and runny nose	2	AstraZeneca	27 May 2021	02 Jul 2021	No	5	5
Case 4	Felt as though had a cold, lethargic loss of sense of taste 2 days after PCR test	2	AstraZeneca	20 May 2021	17 Jun 2021	No	4	7
Case 5	Generally unwell, runny nose, then after 3 days: cough, loss of taste, febrile, abdominal pain	2	AstraZeneca	29 Apr 2021	27 May 2021	No	4	10
Case 6	Nasal congestion, felt generally unwell, sore throat	2	AstraZeneca	21 May 2021	22 Jun 2021	No	4	6
Case 7	Generally unwell, sore throat, runny nose	2	AstraZeneca	29 Apr 2021	27 May 2021	No	4	10
Case 8	Generally unwell, runny nose, high temperature after 3 days, cough after 2 days	2	AstraZeneca	25 May 2021	22 Jun 2021	No	4	6
Case 9	Generally unwell, worst cold, lethargic, runny nose	2	AstraZeneca	21 May 2021	22 Jun 2021	No	4	6
Case 10	Generally unwell, sore throat, runny nose resolved in 48 hours	1	AstraZeneca	21 May 2021		No		11
Case 11	Generally unwell, vomited, loose stool, low backache	1	AstraZeneca	21 May 2021		No		11
Case 12	Worst cold, generally unwell, lethargic, runny nose, sore throat	1	AstraZeneca	21 May 2021		No		11
Case 13	Slight runny nose and feeling under the weather	1	Pfizer	18 Jun 2021		No		7
Case 14	Runny nose, sore throat, tight chest, PCR test negative	2	AstraZeneca	21 Jan 2021	27 Feb 2021	No	5	23
Case 15	Worst cold, generally unwell, lethargic, runny nose, sore throat, PCR test negative	2	Pfizer	06 Jan 2021	12 Feb 2021	No	5	25
V close contact		2	AstraZeneca	04 Jun 2021	08 Jul 2021	No	5	4
V close contact		2	AstraZeneca	29 Apr 2021	04 Jun 2021	No	5	9
V close contact		2	AstraZeneca	21 May 2021	22 Jun 2021	Yes 20 Nov	4	6
Contact		2	AstraZeneca	21 May 2021	22 Jun 2021	Yes 20 Nov	4	6
Contact		2	AstraZeneca	21 May 2021	22 Jun 2021	Yes 20 Nov	4	6
Contact		2	AstraZeneca	29 Apr 2021	27 May 2021	Yes	4	10
Contact		1	AstraZeneca	21 May 2021		Yes 21 Jan		11
V close contact		1	Moderna	12 Jun 2021		No		8
V close contact		1	AstraZeneca	21 May 2021		No		11
V close contact		1	AstraZeneca	21 May 2021		No		11

SP, service personnel.

Table 2 Frequency of symptoms experienced by UK SP

Symptom	Frequency
Generally unwell	15
Sore throat	7
Runny nose	13
High temperature	1
Cough	2
Loss of smell	2
Any of the big 3 symptoms	4

SP, service personnel.

individual was severely unwell, activity had to be suspended during isolation. Periods of isolation can have a significant negative effect on Short Term Training Teams who typically deploy for 6 weeks. Commanders and medical officers should take this into account when planning.

While vaccination showed no effect at decreasing the likelihood of infection, no SP who had had previous PCR-confirmed COVID-19 was a case. Of the 11 individuals who were not cases, 5 had previously had a positive PCR test.

Only four patients experienced any of the big three COVID-19 symptoms (high temperature, cough or loss of taste/smell) (see Table 2). When these symptoms did occur, it was at least 48 hours after the first symptom. All 15 patients felt generally unwell, 13 had runny noses and 7 sore throats. This is consistent with result from the ZOE Study which found these symptoms to be more common in patients who were double vaccinated or infected with the delta variant.⁵

This shows clinicians can no longer rely on the big three symptoms as a tool for ruling out COVID-19 which must be considered in anyone presenting with

minor symptoms. This poses a challenge to clinicians as COVID-19 cases must be isolated early to halt an outbreak. However, over-reacting and isolating all patients who might possibly have COVID-19 and their contacts can also be harmful to operational effectiveness. Prompt testing is invaluable.

This outbreak shows the challenges of COVID-19 are as present now as ever in the deployed Role 1 setting. The vaccination does not prevent SP from contracting or passing on the virus and the varied symptoms make diagnosis harder than ever. The chain of command and clinicians should bear this in mind when setting Force Health Protection measures and seeing patients.

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