

## The Spanish Flu and the First World War: A Historical Analysis of the Pandemic's Impact on the Conduct of War and its Lessons for the British Army of 2020



Soldiers from Fort Riley, Kansas, ill with Spanish flu at a hospital ward at Camp Funston .

From [Otis Historical Archives, National Museum of Health and Medicine](#)

The influenza pandemic, also known as the Spanish Flu, which hit the World the 1918 and lasted until 1920, was the deadliest outbreak of disease in the 20<sup>th</sup> century. The aim of this study is to analyse the impact that the pandemic had on the belligerent nations of the First World War and, in particular, their armies. How were the armies affected, what impact did the pandemic have on the ability to fight, and what measures did the armies take to contain the virus? Last, but not least, the study will offer some possible consequences and lessons for the British Army of today. Considering that CHACR supports the British Army, it is fitting that the emphasis lies on the UK experience of the Spanish Flu; however, other armies and nations are also taken into consideration to present a more all-encompassing picture of the situation and challenges that the Spanish Flu presented at the end of the First World War.

In order to answer the questions above, the study is divided into three parts. Part one presents an overview of the Spanish Flu pandemic and thus provides the context for the following parts. Part two analyses how the armies were affected and what measures were taken to overcome the pandemic. The third part presents some conclusions of the analysis of the Spanish Flu for the British Army of 2020 and beyond. For a wider discussion of the role of pandemics in military history the reader might also want to consult the CHACR article 'The Corona Virus and its Strategic Consequences Based on Historical Lessons', which is accessible at <https://chacr.org.uk/2020/03/31/31-march-2020-the-corona-virus-and-its-strategic-consequences-based-on-historical-lessons/>.

## 1. An overview of the Spanish Flu

### 1.1 The Three Waves of the Pandemic 1918-1919

Influenza is a viral disease which occurs in both animals and humans. It is a highly contagious, but seldom lethal, disease. The virus has the tendency to mutate, which makes the spread of it difficult to contain. This process is called 'antigen drift' and requires a constant re-evaluation of the virus and adaptation of flu immunisation, which has only been available since the 1940s. More drastic changes are called 'antigenic shifts'. Such a shift is an abrupt, major change in an influenza virus. A shift can result in a new influenza subtype in humans. Such a shift can occur when an influenza virus from an animal population gains the ability to infect humans. These animal-origin viruses can be very different from the same subtype in humans, so that most people do not have immunity to the new virus. While influenza viruses change all the time due to antigenic drift, antigenic shift happens less frequently<sup>1</sup>. Shifts were, for example, responsible for the outbreaks of the following pandemics: The 'Russian Influenza' of 1889-1892, the 'Spanish Influenza' of 1918-1920, the 'Asian Influenza' of 1957, the 'Hong Kong Influenza' of 1968 and the 'Swine Flu' outbreak of 2009.

The Spanish Influenza appeared in three waves. The virus probably moved from pigs or poultry to humans in the Mid-West of the USA in January or February 1918. The training camps of the US forces were the perfect breeding grounds for the virus. Consequently, the first mass illnesses were reported in Camp Funston in Texas at the beginning of March 1918. By mid-April, the virus had reached France via the troop transports across the Atlantic. The first cases in Europe were recorded in Bordeaux. The wider European public was made aware of the virus in May 1918. The virus had also travelled to neutral Spain, probably carried by Spanish workers who

had worked in France<sup>2</sup>. The reports of the Spanish press, which was not under official censorship, of the outbreak in the country gave the influenza the name 'Spanish Flu', which has stuck to the present day. In the German case, infections were noticed from the beginning of May, approximately three weeks after the virus had reached the Entente camp. In Germany the peak was reached in July, while in the Entente nations it had been reached by mid-June. The flu spread widely amongst the belligerent nations and armies. In the German case, 139,000 soldiers fell ill with the flu in June 1918, followed by 399,000 men in July. In total, this wave infected 700,000 German and 225,000 British soldiers. France reported 55,000 cases, but this figure has been discarded as too low<sup>3</sup>. Despite these high numbers, the effect on military operations was actually relatively low (as discussed in more detail below). Usually, the effects of the first wave of the flu were mild, and people suffered from the symptoms for four to six days, although the soldiers were generally fatigued after the illness<sup>4</sup>. At the peak, those suffering from influenza represented approximately 55% of all soldiers reported sick<sup>5</sup>. Of these, 85% could be treated within their units and the field hospitals were usually not overburdened with the cases.

The second wave was far more severe. Its outbreaks were simultaneously reported in the last third of August 1918 in Brest (France), Freetown (West Africa) and Boston (USA). The wave lasted until December. It seems that the virus had mutated: It now showed a mortality rate which was 25 to 30 times higher than a usual seasonal influenza. A special feature of this wave was that the virus affected predominately people between 15 and 40 years of age – those people that usually have the strongest resistance to the flu. This was also the age group from which the soldiers of the First World War were drawn. The first wave had resulted in some herd immunity amongst the population, and the absolute number of people affected during the second wave was subsequently lower than in the first wave. Nevertheless, the severity of the mutated flu made this the deadliest of the three flu waves of the Spanish Flu. In the UK, 10% of all fatalities due to the Spanish Flu were caused by the first wave, 64% by the second wave, and 26% by the third wave<sup>6</sup>. During October alone, the French Army may have suffered as many as 75,000 cases, the American Expeditionary Force 39,000 and the BEF 14,000; there are no reliable statistics available for the German side for this period<sup>7</sup>. During the second wave 43,000 US servicemen died, a number only slightly lower than the AEF's Killed In Action in that period.

The third wave occurred across the globe at the end of 1918 and slowly weakened in the spring of 1919. This form of the virus was weaker than the previous one and the population had again

acquired a certain degree of herd immunity, which contributed to the comparatively low lethality of the virus – which was, however, still higher than that of the first wave<sup>8</sup>. Of the three waves, the last one has left the least impression on the nations’ memories. Nevertheless, the last wave has to be seen in the wider context of the so-called ‘five-year flu’, which saw recurrent outbreak of the disease until 1923. These subsequent waves still showed an increased infection rate compared to the normal flu outbreaks prior to the war. To give just one example: In the German Imperial Navy, 7‰ of the sailors had fallen ill with influenza between 1907 and 1912. In 1918, this number increased to 93‰. 1920 and 1921 saw a reduction of flu infection to 56‰ and 35‰, respectively. In 1922, however, a significant increase to 65‰ occurred. From 1923 onwards, the figures reduced and reached pre-war levels<sup>9</sup>.

## 1.2 Mortality Rates

In total numbers, this pandemic was probably the deadliest one in the history of mankind. The total loss of life is unknown, and still debated, in particular because of missing data from Asia and Africa, and from Russia, which was torn apart by a civil war. Recent estimates figure that up to 50 million people died, but this number could have been twice as high<sup>10</sup>. The Spanish Influenza pandemic was ‘the single worst demographic disaster of the 20<sup>th</sup> century’.<sup>11</sup> The exact mortality rates are difficult to establish. Similar to the current COVID-19 crisis, many people died ‘with’ the virus, but not necessarily ‘of’ the virus. All of the figures presented in the literature have therefore to be taken *cum grano salis*. It seems to be accepted that over half of the victims to the disease were found in Asia, followed by Africa. It is estimated that the virus killed 4% to 6% of the population in Congo, India and on the Fiji Islands.<sup>12</sup> Samoa is thought to have had the highest mortality rate with up to 22%<sup>13</sup>. These figures include direct and indirect losses, e.g. deaths caused by famines as results of lack of agricultural labour as a consequence of the pandemic.

In Germany, the three waves of the Spanish Flu killed approximately 350,000 people, the vast majority of these being civilians<sup>14</sup>. This has been explained by the availability of better medical care for military personnel. This mortality rate equates to 6‰ of the population. The United Kingdom had the same mortality rate, while the US and France suffered more: 6.5‰ and 7.2‰, respectively. Portugal and Italy were the European belligerent nations with the highest mortality rates, both with approximately 10‰. It would be wrong, however, to conclude that only the nations at war suffered from the pandemic. The neutral countries were affected, too: mortality

rates in Sweden and Switzerland were both 5.9‰. The highest mortality rate amongst the neutral countries was found in Spain, where it stood at 7.1‰. These figures show that the mortality rate was not decided by whether a nation was at war or not. It has been argued that the mutation and weakening of the virus in 1918, together with better medical care, resulted in a comparatively low death rate in some of the belligerent European nations, especially in Germany<sup>15</sup>. The mutation has also been used as an explanation as to why the cities on the east coast of the US were hit harder than the cities on the west coast, where the flu arrived later. This assumption is supported by the detailed records of the US training camps – those who contracted the virus in a later stage of the waves had, generally speaking, a higher chance of survival. All belligerent nations also found that soldiers coming from urban centres suffered less than those from rural areas, as the closer co-habitation in cities had resulted in a better developed immune system<sup>16</sup>.

## 2. **The Spanish Flu, the Armies' Counter-Measures and its Impact on the Conduct of War**

In common with the rest of the world, the 1918-20 influenza pandemic hit the British Army hard. Infection was prevalent, and during the second, the most virulent wave of the outbreak, many died. However, set in the wider context of the First World War and its immediate aftermath, three factors ensured that it had limited effect on military operations. First, it was always overshadowed by greater events. The first two waves coincided with critical periods of strategic activity: the culmination of the German spring offensive and then the culmination of the Allied Hundred Days Campaign. Similarly, the third wave of the pandemic coincided with the rapid period of demobilization as Britain struggled to meet a growing economic challenge as a consequence of its wartime efforts. The second factor was that the pandemic was also set in a wider context of sickness and injury; influenza was not always the greatest threat to health faced by military manpower. Thirdly, the pandemic struck the UK and the British Army when its Military Medical Services were deployed at their most developed state and had significant experience in managing sickness and injury on an expeditionary campaign; by and large, the medics had the resources to cope with the blow. These three factors converged to ensure that, while significant steps were taken to combat the outbreak, the appetite to tolerate risk was high. It had no discernible constraining effect on the activities of the General Staff. It rarely featured in the situation reports from the Adjutant General in the General Headquarters of the BEF, or his deputies in the Field Armies. It was one condition of many countered by the Director

General of the Medical Services. As such it must be concluded that the pandemic's impact on the Army's ability to prosecute the War was minimal.

The first cases of the pandemic were recorded on 26 May 1918, between which date and 20 July, 180,465 BEF personnel had been admitted to medical facilities for treatment of the infection<sup>17</sup>. This period overlapped with the second half of the German spring offensive, the first two operations of which, in Picardy and on the Lys in March and early April, had cost the Allies some 367,000 casualties of which 260,000 were British<sup>18</sup>. These attacks had threatened the very existence of the BEF in France. Nor did Germany reduce the pressure. The day after the first BEF influenza case was admitted for treatment, the third German operation swarmed over the Chemin de Dames ridge, capturing Soissons before it was halted on 6 June. Three days later the fourth attack was launched along the river Matz, which culminated in a desperate French counter attack on 12 June<sup>19</sup>. Although both of these attacks were aimed mainly at the French Army, they inflicted a further 172,000 Allied casualties of which 28,000 came from the BEF<sup>20</sup>.

Manpower now became the critical issue as, from mid-June to late July, both Germany and the Allies sought to bring the military situation to a successful conclusion. The BEF remained the strategic target for Germany, as plans were laid for a massive culminating attack in Flanders aiming to knock the BEF out of the war and capture the channel ports. The British were aware of this and instituted a raft of efficiency measures designed to sustain their frontline strength. Orders were issued to 'comb out' all Category 'A' WOs and NCOs from labour units for re-posting<sup>21</sup>. Likewise, later in the month, as many Category B1 and B2 personnel as possible would be sent from the UK to France to reinforce the garrison and support units<sup>22</sup>. It is in this context of critical operational threat that we must understand the subordinate prioritization of the BEF's response to the first wave of the influenza pandemic.

The same picture can be found in the German Army at the time. On 30 June, the OHL, the German Supreme Army Command, asked three Armies on the Western Front whether they saw the need to postpone the final offensive which was scheduled for 10 July. Only one of these, 7<sup>th</sup> Army, argued for a delay of three days because of the flu. Only two days later, 7<sup>th</sup> Army changed its view on this (although it now argued for a delay of 5 days based on logistical issues)<sup>23</sup>. From an operational point of view, it has to be concluded that the first wave of the flu did not have an impact on the armies on the Western Front. The effects were felt at the tactical level, but, due to the short duration of the illness, these factors could be managed - not least

because all belligerent nations were affected (albeit with a later peak in the German Army). Isolating individual soldiers and also entire units seemed to be the only possible way to contain the virus from spreading. This was an efficient method, in particular as the virus was still relatively mild during this wave. The diary of an officer from the German 73<sup>rd</sup> Fusilier Regiment mentioned these measures and the effects in his diary: 'On 5<sup>th</sup> July the influenza epidemic became very bad and most of the 3<sup>rd</sup> Bn were ill. The Battalion was put into isolation, but the men were well again in six days, so that we went into line on 11/7/18.'<sup>24</sup>

While the physical impact of this first wave was low, it did, however, have an impact on the soldiers' morale. After the failed German offensives in the West, designed to force a victorious peace, morale in the German Army quickly deteriorated. The flu made a clear contribution to this deterioration. The soldiers felt that their superiors did not show empathy for the suffering of the men, which exacerbated the tension in the class-based German, especially Prussian, army<sup>25</sup>. Another factor also played a role: the German authorities were worried that a high influx of ill soldiers would overburden the military medical service and that the flu could be used as an excuse to leave the front-line. As one soldier stated in his diary: 'More and more soldiers fell ill and walked about half-dead. Although they reported sick, hardly anybody was transferred to the hospitals; the word was that there were no more lightly wounded and sick, only heavily wounded and dead'<sup>26</sup>. By mid-July, the wave had clearly passed and in the last ten days of the month only 10,000 men were reported sick with the flu in the Bavarian 4<sup>th</sup>, 6<sup>th</sup> and 17<sup>th</sup> Armies, which mustered, in total, 1.1m men<sup>27</sup>.

The second wave of the pandemic also found itself overtaken by more critical strategic events. The flu first became apparent in the BEF in mid-October, when DGMS wrote to the Armies warning of a 'grave form of influenza' which was once again prevalent in France, England and other countries<sup>28</sup>. Although this note contained much more stringent advice to the Medical Units than that given earlier in the year, the strategic situation remained the focus of attention, with neither the General Staff, Haig, or the Adjutant General<sup>29</sup> commenting on its effects. The Allied counter-offensives that had been rolling out across the front since mid-July had now reached a critical juncture. Following the successes on the Marne and in Picardy, between July and September, by October the Allies had launched their general counter-offensive and shattered the German Armies on the Hindenburg Line<sup>30</sup>. Bulgaria had signed an armistice on 30 September and Austria-Hungary was reeling as a consequence. In turn, Germany had also

dispatched a note to Washington requesting an armistice on 5 October. However, as the detail was negotiated, military operations were continued to maintain the pressure, with Allied troops crossing the Sambre and the Meuse by early November<sup>31</sup>. Given the sacrifices of the previous four years, and the parlous economic position in which the Allies – and Britain - found themselves as a result<sup>32</sup>, the priority remained military victory in the field above all other considerations. This time any response to the pandemic was subordinated in priority to the conclusion of the war in Allied victory, despite the fact that the flu claimed 7,000 lives a week in Britain alone<sup>33</sup>. A good example of this was the US reaction to the second wave. The large transport movements – in particular the shipping of troops from the US to Europe - facilitated the spread of the disease. As a consequence, the US reduced the number of soldiers on troop carrier ships, first by 10% and then 30%; however, the troop transports were not fully stopped, despite the clear understanding that these transports presented the perfect breeding grounds for the virus. US President Wilson reluctantly accepted the advice of this Chief of the General Staff, Peyton C. Marsh, that shipments had to continue and that the priority was to finish the war<sup>34</sup>.

The increasing threat to the UK's economic position endured beyond the armistice and provided the essential context within which the response to the third pandemic outbreak was managed. Britain's national debt had jumped from £640 million in 1914 to £6.14 billion by the end of the war<sup>35</sup>. Attempts had been made to mitigate this in early 1918 when Britain's reserves of manpower had already had a strategic prioritization with coal, agriculture and shipbuilding in the lead to sustain the economy. In August, Henry Wilson had warned Foch that 15-20 BEF divisions on the Western Front may need to be broken up as a result, in order to free up civilian labour, and in September he had similarly warned Haig that 50,000 miners may be required to avoid a 'coal emergency'<sup>36</sup>.

In the German case, the surrender of 11 November, the collapse of the political system, and the previous political, social and economic upheavals overshadowed the importance of the flu. To mention just one example: The first eight (military) patients suffering from the flu were admitted to the military hospitals in the city of Freiburg in early June 1918 (during the first wave)<sup>37</sup>. By the middle of July, the flu had moved on and things had calmed down again. Yet, by the beginning of October, the flu returned to the city, this time more violently. 'We have seen individual cases who have died in the afternoon of their admission', wrote a medical doctor in Frei-

burg to his corps command on 28 September, highlighting that over a quarter of the local artillery regiment's reserves were already hospitalised with the virus<sup>38</sup>. From the barracks and military hospitals the flu spread across the civilian population. On 1 October, a quarter of pupils in the public schools were sick. A week later, this had extended to 50% of the pupils being affected and the city then closed the schools. This did not stop the flu from spreading. Industrial shops and retail stores were closed, but theatres were initially kept open in order to keep up morale. However, on 21 October these had to close as well. 400 soldiers were admitted to the already overcrowded military hospitals and 80 of these died. Medical care was in even shorter supply for the civilian population. Only the worst cases were submitted to hospital and about 50% of these patients died, usually of pneumonia. Between 10 and 24 October, 136 people died in the city of Freiburg. In total, 444 lives, out of a population of approximately 90,000, were lost in Freiburg to the Spanish flu<sup>39</sup>. This equates to a death rate of approximately 0.5%. And yet the flu did not take centre stage in public discussions or the newspapers. The dominant topics remained the wider political, military and economic developments in these turbulent times. The same was observed all across Germany. The flu did not feature prominently in the newspapers, and articles were restricted to short statements and news. Even these disappeared from the newspapers by the end of October, well before the epidemic was over<sup>40</sup>. The way the spread of the influenza was recorded in Germany supports this point. The first wave was traced relatively effectively. It was clear that the epidemic spread from the Western Front through the Reich. By the time it had reached the Eastern Front, the effects of the virus were less noticeable, probably due to a general weakening of the virus and a partial herd immunity within the country. This situation was completely different during the second wave when Germany stood on the brink of collapse. It is telling that there are no detailed records of the second wave of the flu in the German Military Medical Service files. The flu simply further disrupted a country that was already close to collapse.

The contemporary lack of the public focus on the pandemic was not restricted to Germany. Radical politics had spread across the continent from Russia, with significant unrest breaking out across the UK working class areas. A greatly enfranchised trades union movement haggled with the government for improved conditions and the nationalisation of industries. Compromises were made on both sides but the stand-off was uneasy. The demobilization of coalminers and agriculturalists commenced immediately after the armistice, with 10,000 men having re-

turned to the UK by the end of November, followed by a further 68,000 coalminers by 31 December<sup>41</sup>. This process continued relentlessly through the first half of 1919 as the government attempted to balance the domestic demands and a new economic reality. It is in this context of protecting the economy that we must understand the subordination of the response to the third wave of the pandemic in the UK; this time the strategic priority was to 'win the peace'. This general lack of focus on the influenza was not only a contemporary occurrence. In 1938, Captain J. C. Dunn published a chronicle of his service in the First World with the Second Battalion, The Royal Welch Fusiliers. It is a very detailed account of the war - the 2003 version runs over nearly 600 pages of text<sup>42</sup>. Captain Dunn was the medical officer of the battalion. Considering his background, one would expect to read about the Spanish Flu in the chronicle. And yet, the epidemic remains unmentioned and the index of the book does not contain a single reference to the pandemic.

While the three waves of the Influenza Pandemic were each overtaken by events of greater strategic importance from a General Staff perspective, they were also prioritized against a complex pattern of illness and injury challenges that faced all armies, and thus also the staff of the BEF Medical Services and those of the other belligerent nations on the Western Front. So, as we have seen, while many became infected, the pandemic influenza was not always the priority condition for medical treatment. The health of the BEF was closely monitored: in response to the difficulties of the Boer War, where 93% of casualties (404,000) were sustained from sickness, the Medical Services had undergone a profound reorganization. It surveyed the health of the BEF in almost microscopic detail. Sickness and casualty returns were made on a weekly basis for collation and analysis across the chain of command. They were then reported back through the General Staff to the War Office, tracking the prevalence of disease among the troops and recording the measures that were taken to mitigate the health threats in response. These standardised reports contained a section reporting on the prevalence of infectious diseases including the ever-present dysentery, diphtheria, enteric disease, venereal disease and trench foot. Other infectious diseases such as measles, mumps, malaria and influenza were recorded as they arose<sup>43</sup>.

What becomes clear from these reports is that, while the influenza pandemic was an episodic threat, the operational environment continuously exposed the troops to threats through poor sanitation and close proximity to others who may be infectious on a constant basis. As the first

wave of the pandemic wave broke out during the week ending 1 June 1918, 83 cases of dysentery were reported, 61 cases of diphtheria, 10 cases of enteric disease, 322 cases of venereal disease, 80 cases of malaria and a background rhythm of meningitis, measles and mumps of which 216 were in the newly arrived US troops training alongside the BEF's Fourth Army. In all, 8,719 were evacuated to base hospitals due to sickness alongside 6,454 battle casualties<sup>44</sup>. In the middle of the month the DGMS wrote to his subordinates to reiterate the measures needed to combat the prevalence of dysentery<sup>45</sup>, while a comprehensive series of reports were submitted reporting on the impact of malaria prevalent in units recently returned from the Eastern Mediterranean Theatres<sup>46</sup>. As cases of the pandemic began to increase in incidence, they did so against this ever-present background noise of sick and injured, with 13,600 sickness cases and 4,100 battle casualties evacuated in the WE 15 June. This report also noted that the individuals infected with this illness were usually fit for duty within a week, unlike their counterparts who had contracted malaria or dysentery. Furthermore, as the first wave of the pandemic died away, those other enduring sicknesses remained. In the week ending 5 October, at the height of the fighting on the Hindenburg Line, 700 cases of dysentery were reported among a wider caseload of 11,366 sick and 35,657 battle casualties. There were no reported cases of influenza<sup>48</sup>. Even when the second and more deadly wave of the influenza pandemic did strike later in the month, it remained within a much wider healthcare caseload for the Medical Services. In late October, 7,055 cases of influenza were reported amongst a caseload 15,337 sick and 16,916 battle casualties<sup>49</sup>. Only when the third wave struck in early 1919 had this background health threat been eradicated by removing the troops from the insanitary and dangerous conditions of the battlefield. By 22 February, when 5,768 cases of influenza were reported, DGMS commented that the health of the force was otherwise good, apart from the increase in incidence of venereal disease amongst the less occupied troops<sup>50</sup>. What can be seen from this data is that the impact of the pandemic in 1918-1919 was both episodic in nature and set against a continuous background of large numbers or sick and injured. That is not to say they were not noticed. It is just a reflection that the Medical Services were set up to meet an enduring demand of sickness and injury to keep the BEF operationally effective; It could cope with the impact spikes of the pandemic.

The medical system that the BEF deployed in 1918 was state-of-the-art. It included primary healthcare and trauma care in the front line through Field Ambulances (Fd Amb) and Casualty

Clearing Stations (CCS); secondary healthcare through Stationary and General Hospitals; and most importantly in the fight against pandemic influenza, a suite of supporting public health capabilities provided by Sanitary Sections and Mobile Laboratories<sup>51</sup>. It was these public health teams that confirmed the diagnoses of the outbreaks and provided technical advice on how they could be managed. The symptoms and character of the infection were noted by DGMS in mid-June with advice given to manage the outbreak by distributing the troops as widely as possible in camps and billets. Where reinforcements were brought forward, they were kept separate for four days until proven free from infection<sup>52</sup>. Of note, wider military activity was not curtailed, in particular training. In the Fourth Army, activity continued to receive and train the incoming troops of the American Expeditionary Force (AEF), of which 10,000 men from the 35<sup>th</sup> (US) Division moved through Longpré railhead during the week ending 1 June followed by 21,000 men of the 77<sup>th</sup> (US) Division during the week ending 18 June. Thus training of all sorts continued apace: on a more esoteric note, for example, Fourth Army also noted the qualification of 162 cooks at the Army Cookery School<sup>53</sup>. Social Distancing, of its time, was the primary measure being taken to reduce the spread against a background of necessary activity - it had its place; but its imposition was not allowed to adversely impact the conduct of the wider war.

The provision of health advice was far more stringent, however, during the second wave of the pandemic. This was immediately noted as being more virulent in character, with a much higher mortality rate, than the outbreak of the early summer. Consequently, clear precautionary measures were directed, such as the prevention of overcrowding in billets, the maintenance of ventilation in accommodation, the wearing of warm clothing, the prohibition of public assemblies where necessary, and the isolation of the sick in hospital as soon as they were identified. Within the hospitals, patients were to be isolated with particular attention to the separation of broncho-pneumonia cases from influenza. With echoes of the current pandemic, staff were to wear face masks and visitors were not to be allowed<sup>54</sup>. This was followed up with direction on a vaccination programme against pneumonia, initiated in November, to treat identified cases of the Spanish Flu<sup>55</sup>. While these measures helped the BEF to combat the effects of the disease, the sheer capacity of the deployed organization helped it to meet the demands of the outbreak. By 1918 there were 12,700 medical practitioners in military service attending a military of six million, with only 11,400 remaining in civil practice to attend the remaining 46 million in the civilian population<sup>56</sup>. Clearly the BEF was getting a gold-plated service to 'ensure victory'. As

well as this disproportionate share of clinical manpower, by 1918 the casualty evacuation system was set up to cope with potentially large pulses of battle casualties generated in days of intense fighting. In general terms, the capacity for hospital beds on the Western Front was held at around 72,000, with a further 11,000 beds available as an emergency expansion<sup>57</sup>. Even at the most intense overlapping rates of pandemic influenza and battle casualties in late October and early November 1918, only 66,000 beds were occupied. The system was not broken by the disease and the support to the war was maintained. In fact, the biggest threat to military capability came in the less virulent first wave of the pandemic. Due to the minor impact on the infected individuals, many of who were expected to return to duty in a short space of time, the holding policy resulted in them being held at the Fd Ambs and the CCSs and not evacuated further to the rear. Unlike the hospitals, these units were not configured with the capacity to hold a large number of patients and a certain amount of anxiety was caused over this potential choke-point. This was alleviated by the re-designation of 26<sup>th</sup> and 56<sup>th</sup> General Hospitals at Éta-  
ples on 23 June, in order to receive up to 3,000 influenza patients to clear the forward units<sup>58</sup>.

In short, it has to be stated that the Spanish Influenza, despite its virulence, was not a key consideration for the armies of the Western Front in 1918. Other matters, i.e. fighting the war, took precedence, and the minds of all nations rested on this final goal and the supporting economic and political matters. In the German case, the turmoil of defeat in November 1918 added to this picture. Also, four years of fighting meant that death had lost its sting and the flu dead merely joined the long line of soldiers' and civilians' souls crossing the Styx in those days. Perhaps the *Neue Zürcher Zeitung*, a Swiss newspaper, summed it up most effectively:

And if we are astonished about anything today, it is the unprecedented indifference with which humankind has suffered this disease. But: The world is used to countless deaths. Natural death has lost its sensational value in a time in which the clockworks of frightening machines of war crush a thousand people every day.<sup>59</sup>

### 3. **Lessons for the British Army of 2020 and Beyond**

So much for the background facts, but the 1918-1919 influenza pandemic provides several key lessons for the British Army of 2020:

**First**, the overarching strategic context will always prioritize the responses to a complex set of

threats: both during their passage and in their aftermath. The evidence above that shows that the Spanish Flu, despite its virulence and lethal effect, was pushed aside in the face of higher strategic imperatives is an object lesson. COVID-19 has the nation's full attention, because it is the current major strategic concern (as 'winning the war' was in 1918). Post-COVID-19 the nation's strategic imperative will be economic and social recovery in a global recession after a huge and unforeseen government overspend. The Armed Services' conduct during the COVID-19 pandemic has been widely praised. But the focus is unlikely to fall on them in the aftermath. In 1918, the pandemic was important, but it was less important for Britain than avoiding military defeat in May-July, achieving victory in October-November or avoiding economic collapse in the Spring of 1919. This general fact was the same for all belligerent nations. As Frieder Bauer concluded in his PhD thesis on the impact of the Spanish flu on the German Army, 'Through all levels of military hierarchy runs the thread of how little attention was paid to the flu pandemic.'<sup>60</sup> This point should not be forgotten in a time when the state is trying to avert an overly-damaging long-lasting effect of the COVID-19 pandemic on the country and the population alike. At the time of writing, it is estimated that the Coronavirus jobs bailout alone will cost the UK £40bn every three months – a figure not too far off the annual defence budget<sup>61</sup>. In addition, the world is moving rapidly towards a global recession (and 'depression' is being discussed by the more gloomy forecasters). This will inevitably have a negative impact on Defence: the general pot of money available will be smaller due to a shrinking economy and all government departments will fight hard to defend their budgets in this tough financial climate. It seems likely that a greater sum will be given to the NHS, and potentially other state organisations, which will further reduce the available money for defence. Tough choices will have to be made by all three Services. In the aftermath of the First World War, the answer to this similar problem was to reduce the Army and, proportionally speaking, increase the spending on the Air Force (largely because, in those days, planes were cheap and the Air Force was seen as a relatively economical and efficient way to project power and protect the empire).

Yet the Armed Services would be wise not to see this situation in an entirely negative light and accept an 'inevitable reduction in funding and resource'. The Armed Forces' support in the struggle against the Coronavirus has fallen, not least in the public eye, primarily on the shoulders of the Army, but all three Services should be recognised for the criticality of their contribution as the Integrated Review re-starts in the aftermath. This may not have improved the over-

all bleak financial situation for the Armed Forces, however, it does reflect well upon their reputation and standing in the constant struggle over resources in wider Whitehall. MAC(A), MAC (P) and MAC(C) are, and will always remain, one of the mainstay requirements of any Army. Support to the nation, at home, when it is most required, is almost a given expectation of the British public, and, by inference, of politicians. This pandemic has reminded everyone (from Defence planners and force designers, to Treasury officials, to politicians, to the voting public) that when things go wrong the nation looks to its sole provider of a large number of organised, disciplined, resourceful and robust individuals (who also happen to have a range of useful skills from logistician to first-aider), who are prepared to put the nation's needs before their own. Under these circumstances the Armed Forces are expected unfailingly to perform. Especially if all else is seen to be failing, or, at best, wobbling. And the Army's support to the nation during COVID-19 has occurred at a time of unusually low operational deployment abroad and thus of fewer limitations upon rapidly available manpower. This is a timely reminder that a proper understanding is essential of where the 'critical mass' of the Army (and, indeed, the Royal Navy and the RAF) may sit if the nation is to realistically expect it to be a 'failsafe' backstop in the event of MAC(A), (P) or (C) emergencies.

**Second**, this short paper presents repeated evidence that military personnel had access, at the time of the Spanish Flu, to much better medical facilities than their civilian counterparts. The demands of the war had meant that national medical efforts were centred upon the military. This raises a significant line of thought for the Twenty-first Century Army. The NHS is currently being heavily supported by the military. Conversely, however, the military in the last two campaigns (Iraq, but especially Afghanistan) only coped as well as it did in medical terms because of support from the NHS. The AMS (Regular and Reserve) is about 7,000 strong, of which 775 are MOs and 2,000 are NOs . The NHS is about 1.2 million strong of which 147,000 are MOs and 290,000 are NOs (Note these are full time posts and do not include people working on a job-share basis)<sup>62</sup>. Furthermore, lessons learned in TELIC/HERRICK percolated back into the NHS via Reservists who were mobilized 2003-2014. Trauma casualties with a 10% survival rate in 2003 had a 60% survival rate by 2011-12. All of this knowledge was exposed to the Reserves, fed back into the NHS, and without doubt was absorbed to positive effect: there is evidence, for example, that such feedback was of considerable value in the Greater Manchester Major Incident Response that reacted to the Arena Bombing in 2017.

In the Spanish Flu instance the imperative was the ‘winning of the war’, so the civilian population took second place. In the Iraq/Afghan instance the military demand for trauma surgery, relative to NHS resources, was low enough that the military could be supported. Consequently, the AMS during the operations in Afghanistan and Iraq, especially when they were running at their peak simultaneously, was able to rely heavily on support from the NHS, which has c13,000 trauma and general surgeons, many of whom volunteered their services to those military operations. Furthermore, operations in Afghanistan generated an expectation that casualties would be evacuated at unprecedented speed to Camp Bastion and, from there once stabilised, at similarly unprecedented speed to The NHS Queen Elisabeth Hospital in Birmingham. At the same time, the AMS is especially under pressure in the provision of specialist skills, and requires stringent positive management to ensure FE@R are maintained in these specialities. A good example of a shared shortage (both AMS and NHS) is Specialist Pathology: for this the pool is very shallow and, with only around 130 immunologists and 630 microbiologists in the NHS, the back-up for the AMS is sparse.

Conversely, the Army has been able to offer considerable support to the NHS in terms of medical logistics. The AMS builds facilities in bare fields and can have them at IOC in a matter of hours. Therefore, fitting out somewhere like the Excel Centre is much more straight-forward for the military than it would be for those with little or no practical experience in this respect. The AMS (Regular and Reserve) has about 3,500 MSOs and Medics who could be made available to do this task (although this is a ‘whole workforce’ figure, assuming that they were not providing healthcare elsewhere). The NHS has about 500,000 equivalents running their hospitals. However, these are committed to running the extant facilities, so it is fair to ask questions about their ability to surge elsewhere if the AMS were not able to help.

In short, the NHS has been able to count on support from the Army during COVID-19 because the Army is less deployed than it has been for some time. Conversely the Army was able to count on support from the NHS on recent operations because the NHS was not coping with an epidemic, or pandemic. The events of spring 2020 have, surely, made it plain that contingency planners need to be clear that, at a national strategic level, the UK is unlikely to have the capacity that it has enjoyed to conduct military operations abroad at scale and, simultaneously, to fight an epidemic at home and rely upon the same degree (or anything like the same degree) of mutual support between the Army and the NHS. This will bring a whole range of clear implica-

tions for expectations on medical care, from the provision of trauma care and rapid-repatriation medical evacuation in military operational theatres, to the provision of logistic and hospital-building support at home.

**Third**, pandemics can take place against a background of enduring health threats. This is as true today as it was in 1918-19. Of particular note is the recurring presence of malaria, which reminds us that for the Northern Hemisphere COVID-19, like all pandemics, is an episodic event. For the Southern Hemisphere, malaria affects over 200 million people worldwide each year of which 400,000 die<sup>63</sup>. These enduring threats to global health security will become increasingly important in the coming years. A national and international re-focussing upon global health as a result of the shock of the COVID pandemic may force nations' armies to think differently about their priorities and task-sets: if one of the primary tasks becomes to support the nation in the fight against disease this will have inevitable effects upon the Army's plans for its structure and capability set. A re-emphasis on engagement abroad for reasons of conflict prevention may require a further sharpening of focus if the incidence of various global health issues is identified as a possible root cause of future conflict. A range of questions would arise if this re-balancing occurs: will the Army concentrate on supporting the home nation or will it be increasingly involved in containment operations abroad to prevent threats reaching home, such as the Ebola crisis? If this is not a primary task, how can the Army ensure that British people and also British interests can be protected overseas when a new pandemic occurs? If it is a main task, what resources will be available to fight a military campaign? The Army might have to make some tough decisions on what tasks it will be able to fulfil in the future. Strategic decisions may have to be taken concerning the Army's role and purpose, in particular in the light of financial austerity. In conjunction with the second point, made above, this point boils down to a question of resources and resilience. At present, the Army can afford to support the civilian agencies, because it is not engaged in the realm of its primary *raison d'être*: fighting a (large scale) war.

But this might change. The scale of the challenge facing the nation that COVID-19 has presented may mean that the Army has to re-consider some of those structural and force development options that may have previously been rapidly written off as unthinkable, such as the introduction of a new form of National Service. These decisions may well lie outside the Army, but the Army might want to start thinking about things like this so that it can get ahead of the

wider debate when such questions arise. In the context of this study, the Medical Services are a good example of this wider issue: The Medical Services deployed in support of the BEF in 1918 had both the capability and the capacity to meet the challenge. The BEF's clinicians were able to identify the nature of the threat and instigate effective mitigation measures that helped pave the way to victory. Their modern-day counterparts are equally up to the task in capability terms, but they are a very small part of a much smaller Army. Similar examples could be provided for every branch of the Army that is currently engaged in the struggle against the Coronavirus. With a smaller Army to deploy, our margins for error are not as wide as they were a century ago. As we measure ourselves against 'peer' or 'near peer' adversaries we would do well to remember that Mother Nature is an implacable enemy, and only one potential enemy amongst many. In 1918, the main enemy was Germany, not the flu. The Army in 2020 may need to start thinking more widely about who or what the main enemy(s) will be in the years to come and, based on this, to make (and influence) decisions that will have a deep impact on the Army, its structure and capabilities, and possibly upon its general *raison d'être*.

**Fourth**, COVID-19 has forced us, nationally and as a military, to think about 'measures' within the Army in the event of such outbreaks. This paper quotes, for example, evidence of 'social distancing' in the First World War as a measure against the spread of the Spanish Flu. Interestingly in the Spanish Flu example there were clear directives concerning individual personal behaviour relative to those who were infected, or likely to be infected. The most significant measures, however, within the Armies, consisted of isolating or quarantining whole units. (This, of course, has happened in COVID, with things like the quarantining of the Diamond Princess cruise ship - with unpleasant consequences for those on board). Unit isolation could happen in the First World War simply because there were so many units that it was reasonably cost-effective to wrench a battalion or two out of the line for a week at a time, and place another one (even if it was over-tired or under-strength) into the line in its place. Do we have the manpower to do that now, on operations, if we were similarly struck by a pandemic? Is there the capacity? What are the alternatives? An examination into what measures the troops are taking and have taken during COVID-19, both in barracks and when deployed both at home and abroad, would be very useful. Does this experience provide the Army with an opportunity to draw up a precautionary doctrine or list of SOPs?

**Fifth**, COVID raises interesting issues about the management of morale on operations. When

troops are deployed they tend to focus hard on what they are doing and forget about home. Providing, and it's a very big providing indeed, all is well at home. We have all seen how quickly the morale of very dependable men and women goes into melt-down when their spouse back home tells them that the washing machine has broken down and that they've taken out a pay-day loan from QuickRipOff Ltd to pay £2,000 for a £200 replacement machine. Or, much worse, that one of the children is badly ill. The management of fighting morale, in the event that circumstances at home may suggest that families are as much at risk as those deployed, needs careful consideration in the light of the COVID crisis. Instant communications, social media, et al, regardless of the restrictions that one attempts to put in place, mean that those deployed have a very much closer relationship with those at home than they ever have had before; with concomitant implications for the management of morale.

The study could not find any reference to a coordinated reassurance campaign (either at home or on the front-line) that people were being protected and cared for as the Spanish Flu struck the civilian population. There are likely to be several reasons for this: 1) Any statement to this effect would have resulted in a worsening of morale - if the authorities talk about it, it really must be bad. So, best not to worry people. 2) The flu hit both civilians and military personnel alike, so it was a general problem, not one restricted to one group. In our current 'wars of choice' we have seen a gulf between the front-line and the 'home front' in matters of perception. If all groups are hit equally hard, this becomes a leveller (although it does not take away the individuals' concerns for their loved ones) - which might make it easier to accept/deal with such issues. A similar effect could be seen in World War 2 Germany during the Allied bombing campaign. This is particularly important in a major war which is seen as a defensive struggle, as all nations saw in the First World War: it strengthens resilience and also makes soldiers fight - the sooner this is over, the sooner we can all go home and (in this case) look after the families. Such a sense of unity is harder to achieve in a 'war of choice' in a far-away land. 3) Naturally, social media as such did not exist in 1918 and perceptions are absolutely different today. In most people's experience, the biggest decline in morale occurred when the internet booths in Afghanistan were closed - sometimes even only for an hour or so. How this can be managed and controlled is an issue worth considerable thought. 4) Censorship: there was no effective official censorship in any of the armies of WW1. To give just one example: The German Field Postal Service had a strength of 8,000 military personnel and civil servants. These were pre-

dominately occupied with shifting large volumes of mail: In total, 28,7 billion items were sent (postcards, letters, parcels). On average, this equates to 9.9 million a day being sent from the "home front" and 6.8 million sent from the front-line<sup>64</sup>. Methods to increase censorship were trialled, but quickly abandoned, e.g. having to hand open letters to unit commanders who were supposed to read them and pass them on. The sheer volume of items made this untenable. Naturally, the perception of an effective official censorship resulted in personal censorship of the writers. This is a factor that is very difficult to measure, but it clearly occurred.

In short, with social media and connectivity the way that it is now, if we had troops deployed on operations right now at the scale that we have had over the preceding twenty years, there is little doubt that morale would be being seriously affected (or, at best, heavily distracted), by worries about families at home when the death toll is as high as it is now. There are troops deployed now, and it would be well worth interviewing them on return to garner an insight into the likely shape and size of the problem if the deployments were of a different scale and nature. It is best to do some thinking ahead of these circumstances arising than it is to wait until they arise and then deal with them at the time.

**Sixth**, and the final point, is linked to the infection, resistance, immunisation and mortality rates. The Spanish flu pandemic resulted in very varied mortality rates (as outlined in 1.2). This raises a range of interesting questions. First, we have seen, both in the case of the Spanish Flu and of COVID-19, that the main fight against a pandemic (and, in particular, mortality) has to lie in containment of a disease and the slowing down of the spreading of the virus. Second, we have seen that priorities may mean that operational or strategic demands mean that it may be necessary for the Army to ignore (or make the best that it can of) the effects of such a virus and get on with its main tasks regardless – or, to put it in the terms of Cold War NBC training “fight dirty and accept the consequences”. Third we have considered that it may be necessary to contemplate using the Army to deploy abroad to assist others in fighting disease in order to prevent its arrival in the UK. If all this is so, and without entering the dangerous world of genetics and genetic engineering, there may well be an entire area of research that needs a new emphasis. In the First World War, for example, city dwellers seemed to have higher immunity levels to the flu than people from the rural areas. Research is being conducted, across the globe, into ways of ‘improving’ the human body – as much for military purposes as for nefarious sporting purposes. This pandemic may have lent a new angle to the practical imperatives and

moral arguments that surround this topic.

This study was requested by the Strategy Department of Army HQ, wishing to establish a better understanding of the facts of the Spanish Flu outbreak from 1918 to 1920 and to offer some insights from that experience that may be of value for the development of the Army in 2020. It has sought to offer questions and conclusions to support thinking not just in terms of the short-term imperatives of an Integrated Review, but also in terms of longer Force Development. Its findings, therefore, offer few 'answers', but rather, hopefully, provide the food-for-thought that was sought.

### Endnotes

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