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REASSESSING FRONTLINE MEDICAL PRACTITIONERS OF THE BRITISH CIVIL WARS IN THE CONTEXT OF THE SEVENTEENTH-CENTURY MEDICAL WORLD*

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ABSTRACT. *Medical provision in Civil War armies has generally suffered a poor reputation. Medical matters have been excluded from assessments of how far Civil War armies confirm evidence of the so-called 'Military Revolution', whilst Harold Cook argued that it was not until after the Glorious Revolution that the medical infrastructure of the armed forces was brought in line with continental practices, particularly those of the Dutch army. Despite the recent rehabilitation of early modern practitioners elsewhere, frontline military practitioners continue to be dismissed as uneducated, unskilful and incompetent. This is largely due to the lack of a fresh perspective since C. H. Firth published Cromwell's Army in 1902. This article argues that the English were well aware of current medical practice in European armies and endeavoured to implement similar procedures during the Civil Wars. Indeed, almost all the developments identified by Cook for the later seventeenth century can be found in Civil War armies. Whilst failures may have occurred, most of these can be attributed to administrative and financial miscarriages, rather than ignorance of contemporary medical developments. Moreover, there is little to suggest that medics mobilized for Civil War armies were any less capable than those who practised civilian medicine in this period.*

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In 1676, Richard Wiseman recalled an incident from his days as a surgeon in the royalist armies during the British Civil Wars. Following the siege of Taunton, he was called upon to treat a man whose

Face, with his Eyes, Nose, Mouth, and forepart of the Jaws, with the Chin, was shot away, and the remaining parts of them driven in. One part of the Jaw hung down by his Throat, and the other part pasht into it. I saw the Brain working out underneath the lacerated Scalp on both sides between his Ears and Brows.

Faced with this horrific scene, Wiseman noted simply that he ‘was somewhat troubled where to begin’.¹ Many new challenges faced the medical personnel deployed in the Civil Wars, the English sphere of which represented the first significant conflict in that country for over 100 years. Civil War armies were reasonably large by contemporary standards and casualty figures were high.² Technological advances had led to the development of more sophisticated weaponry, with greater and more accurate killing power, whilst many who survived suffered from terrible wounds.³

A key feature of the so-called ‘Military Revolution’ of the early modern period was the emergence of armies raised on a larger and more permanent scale, supported by greater financial and bureaucratic mechanisms. In assessing how far Civil War armies confirm evidence of the Military Revolution in Britain during this period, the historiography has focused on issues such as drill, discipline, equipment, organization, funding, and supply.⁴ The issue of medical provision within this context has largely been ignored. Yet, if the Military Revolution in Britain is to be fully assessed, then the influence of continental knowledge and practice upon army medical services must also be considered. Quality medical care was vitally important in influencing an army’s fighting capacity, and the strategic and tactical choices available to its commanders.⁵ Harold Cook argued that it was after the Glorious Revolution that the medical infrastructure of the British armed forces was brought in line with continental practices, particularly those of the Dutch army, though he conceded that the transformation ‘had its roots in previous decades’.⁶ In fact, as this article will demonstrate, almost all the developments identified by Cook can be found in Civil War armies.

By far the most comprehensive study of Civil War medical provision is from Eric Gruber von Arni, which is particularly successful in utilizing the archives of parliament’s permanent military hospitals of the Savoy and Ely House to

¹ R. Wiseman, *Severall chirurgicall treatises* (London, 1676), p. 402.

² E. Gruber von Arni, *Justice to the maimed soldier* (Nottingham, 2015), p. 8.

³ R. A. Gabriel, *Between flesh and steel* (Washington, WA, 2013), p. 1.

⁴ A. Hopper, ‘The armies’, in M. J. Braddick, ed., *The Oxford handbook of the English Revolution* (Oxford, 2015), p. 267.

⁵ *Ibid.*, p. 261.

⁶ H. J. Cook, ‘Practical medicine and the British armed forces after the “Glorious Revolution”’, *Medical History*, 34 (1990), pp. 1–26, at pp. 1 and 26.

provide an authoritative account of hospital care and nursing during the wars. However, he devoted less attention to regimental medical staff or how medical developments in the wars related to long-term developments in the military. If his argument that the Civil Wars ‘elicited a dramatic improvement’ in the medical care afforded to military casualties is to be accepted, then more consideration needs to be given to the personnel who delivered day-to-day treatments to Civil War armies in the field.⁷ Writing in 1902, C. H. Firth expressed a rather uncomplimentary opinion of these men, regarding the large majority as ‘not remarkably skilful’ and some ‘notoriously incompetent’.⁸ Seventy years later, Clive Holmes was in agreement.⁹ Even Gruber von Arni regarded army surgeons as ‘the least competent members of the trade’.¹⁰ As Margaret Pelling argued, the eccentric behaviour of early modern practitioners was exaggerated by nineteenth-century writers to distance themselves from the past, whilst modern medicine represented the ideal.¹¹ The lack of a fresh perspective since Firth’s time has simply perpetuated his views.¹²

This article will argue that like other technological and tactical aspects of the Military Revolution, the English were well aware of current medical practice in European armies and endeavoured to implement similar procedures during the Civil Wars. Most failures can be attributed to administrative and financial miscarriages, rather than ignorance of contemporary medical developments. Moreover, there is little to suggest that medics mobilized for Civil War armies were any less capable than those who practised civilian medicine in this period. Unfortunately, due to discrepancies in the surviving evidence, this article has a significant bias towards the larger parliamentary armies but royalist comparisons and examples from parliament’s other regional armies and garrisons will be used where possible.

I

Theoretically, each of the parliamentary armies had one or two physicians, one or two surgeons, and an apothecary attached to the general staff, whilst each regiment had its own surgeon assisted by two mates. Like many of the military reforms of this period, this arrangement was based on that employed by the Dutch army in the Eighty Years War.¹³ It was the system that Cook noted that

⁷ Gruber von Arni, *Justice to the maimed soldier*, p. 2.

⁸ C. H. Firth, *Cromwell’s army* (London, 1962), pp. 254–5. This work was originally published in 1902.

⁹ C. Holmes, *The Eastern Association in the English Civil War* (London, 1974), p. 174.

¹⁰ Gruber von Arni, *Justice to the maimed soldier*, p. 43.

¹¹ M. Pelling, *The common lot* (Harlow, 1998), pp. 232–4.

¹² C. Carlton, *Going to the wars* (London, 1992), pp. 226–8; Gabriel, *Between flesh and steel*, p. 71; K. Roberts, *Cromwell’s war machine* (Barnsley, 2013), p. 122.

¹³ British Library (BL), Kings MS 265, fos. 44v–45v (pay-rates of the Dutch army in 1630); J. Cruso, *Militarie instructions for the cavallrie* (Cambridge, 1632), p. 24; H. Hexham, *The second part of the principles of the art militarie* (London, 1638), p. 6 (note irregular pagination).

'the British were accustomed to expect' by the beginning of William and Mary's reign and, in fact, seems to have been established practice in English armies by the time of the Civil Wars.¹⁴ A similar scheme was suggested in 1621 for a proposed army intended to recover the Palatinate and was actually employed in the army sent against the Scottish Covenanters in 1639.¹⁵ The adoption of the Dutch-style model brought English military medical provision in line with one of the foremost European armies of the day. Only the Swedish army of Gustavus Adolphus could boast more regimental medical personnel, with an extra two surgeons per regiment/brigade.¹⁶ Of course, the medical provision stipulated on paper was not always implemented in practice. As Holmes pointed out, John Lilburne's regiment lacked a surgeon throughout the Eastern Association's northern campaigns in 1644.¹⁷ In mitigation, efforts were made to cover for absences. Roger Dixon (surgeon to Henry Bulstrode's regiment in the earl of Essex's army) cared for Thomas Tyrell's regiment until Tyrell got a new surgeon and one John Stanley cared for Sir John Meyrick's regiment until John Woodward arrived to take up his appointment.¹⁸

Parliament also copied the novel concept introduced by the Dutch of paying their troops all year round, not just during the campaigning season.¹⁹ Interestingly, the remuneration of parliamentary physicians and apothecaries compares advantageously to their Dutch counterparts. Physicians in the Netherlands received 600 guilders a year, which roughly equated to £100.²⁰ At the start of the war, the two physicians in Essex's army, Richard Gardiner and Edward Odling, were allocated 6s 8d a day, which amounts to more than £100 per year.²¹ In spring 1643, the wage was raised to 10s a day and they were issued with back-dated warrants for the additional pay to the date of

¹⁴ Cook, 'Practical medicine and the British armed forces', pp. 4–5.

¹⁵ F. Grose, *Military antiquities* (2 vols., London, 1786–8), 1, pp. 278 and 370–8; TNA, SP 14/119/93 (report presented by the council of war for raising an army for the Palatinate, 13 Feb. 1621) fos. 159–64; J. Rushworth, *Historical collections* (London, 1682), pp. 1046–50.

¹⁶ Gruber von Arni, *Justice to the maimed soldier*, pp. 5–6; G. Parker, 'The universal soldier', in G. Parker, ed., *The Thirty Years' War* (London, 1997), p. 183; G. Parker, *The army of Flanders and the Spanish Road, 1567–1659* (Cambridge, 2004), pp. 233–5; C. L. Heizmann, 'Military sanitation in the sixteenth, seventeenth, and eighteenth centuries', *Annals of Medical History*, 1 (1917–18), pp. 281–300, at pp. 287–94.

¹⁷ Holmes, *Eastern Association*, p. 174.

¹⁸ TNA, SP 28/127 fo. 310v (Aylesbury garrison accounts, 6 May 1643), SP 28/2B/III fo. 510 (pay warrant for John Stanley, 7 Sept. 1642).

¹⁹ P. Wilson, *Europe's tragedy* (London, 2010), p. 145.

²⁰ BL, Kings MS 265, fo. 45v. A guilder was comprised of twenty stivers and Cruso's *Militarie instructions* suggests a conversion rate of six stivers to a shilling. Thus 600 (guilders) x 20 = 12,000 (stivers), which ÷ 6 = 2,000 (shillings) i.e. £100.

²¹ TNA, SP 28/3B/II fo. 440, SP 28/6/1 fo. 80, SP 28/6/II fo. 252 (pay warrants for Richard Gardiner, 23 Nov. 1642, 1 Mar. 1643, and 12 Apr. 1643), SP 28/3B/II fo. 442, SP 28/5 fo. 335 (pay warrants for Edward Odling, 23 Nov. 1642 and 28 Feb. 1643). The pay warrants show that the physicians were paid every day, so on a calculation for 365 days, their salary would have been £121 13s 4d.

their commissions.²² Thereafter, this was the going rate.²³ From 1649 onwards, the wage varied, possibly reflecting senior and junior status. For example, of the two physicians to the army for the invasion of Ireland, William French was paid at the 6s 8d rate but Joseph Waterhouse at 10s per day.²⁴ The apothecaries, who received no daily pay in the Dutch armies, were paid 5s a day in the parliamentary armies, rising to 6s 8s in 1647, and sometimes had two assistants at 2s 6d per day each.²⁵ Physicians and apothecaries were also able to claim expenses.²⁶

Parliamentarian surgeons were paid the same as those in the Netherlands, who could expect a wage of 25 stivers a day.²⁷ The military author John Cruso calculated this equated to 4s, whilst surgeons' mates received the equivalent of 2s 6d.²⁸ Thus, with some exceptions at the start of the war,²⁹ this was the pattern settled upon.³⁰ The same rates applied to the surgeons on the general staff.³¹ Those who incurred expenses beyond those which were usually expected received recompense from the public purse, whilst each regimental surgeon received money for a chest of medicaments.³² The provision for surgeons' chests, introduced in the Dutch army by 1612, had been brought into

²² TNA, SP 28/7 fo. 127 (pay warrant for Edward Odling, 26 May 1643), SP 28/7 fo. 145 (pay warrant for Richard Gardiner, 29 May 1643).

²³ For example, TNA, SP 28/12/1 fo. 69 (pay warrant for Edward Odling, 5 Feb. 1643/4), SP 28/25/III fo. 379 (payment to Henry Glisson (Eastern Association) for 1 Jan. to 26 Feb. 1644), SP 28/29/1 fo. 9 (pay warrant for Adam Stryall (New Model), 17 Apr. 1645). Stryall only collected 5s a day in accordance with the New Model Ordinance, whereby any officer who received 10s a day or more received half their pay at the time and was issued with a debenture for the rest: Firth, *Cromwell's army*, pp. 200–1.

²⁴ TNA, SP 28/62/II fo. 229 (pay warrant for William French, 21 Aug. 1649), SP 28/62/1 fo. 40 (pay warrant for Joseph Waterhouse, 30 Aug. 1649).

²⁵ BL, Kings MS 265, fo. 45v; TNA, SP 28/2A/II fo. 189 (pay warrant for Abraham Webb (Essex's army), 8 Sept. 1642), SP 28/25/III fo. 379 (payment to Thomas Bert (Eastern Association), 20 Dec. 1643 to 28 Feb. 1644), SP 28/36/II fo. 147 (pay warrant for Abraham Webb (New Model Army), 6 Feb. 1645/6); *Journals of the House of Lords*, x (1648–9), p. 66.

²⁶ For example, TNA, SP 28/2/IIA fo. 197 (warrant to pay Richard Gardiner, 9 Sept. 1642), SP 28/2A/1 fo. 96 (warrant to pay Abraham Webb, 3 Sept. 1642).

²⁷ BL, Kings MS 265, fo. 44v.

²⁸ Cruso, *Militarie instructions*, p. 24.

²⁹ For example, Lawrence Loe/Lowe, Essex's original staff surgeon, was paid 20s a day for himself and two mates: TNA, SP 28/3B/II fo. 499 (pay warrant for Lawrence Loe, 29 Nov. 1642). Likewise, the pay warrants issued to the colonels in Essex's army in Aug. 1642 only allowed for 2s a day for the surgeon's mates: TNA, SP 28/1A fos. 29, 38–9, 40–1, 64, 66–9 (pay warrants for regimental colonels, Aug. 1642).

³⁰ For example, TNA, SP 28/3B/II fo. 411 (pay warrant for Roger Dixon (Essex's army), 19 Nov. 1642), SP 28/14/1 fo. 180 (account of Thomas Fothergill (Eastern Association), 1 Jan. to 21 Apr. 1644), SP 28/122/III fo. 417 (payment made to Alexander Aurelius (Southern Association), 25 Apr. 1645); SP 28/138/III fo. 4v (Beverley garrison accounts, 1642–3).

³¹ For example, TNA, SP 28/16/1 fo. 108 (pay warrant for Timothy Langley, 26 June 1644), SP 28/15/III fo. 265 (pay warrant for Edward Elsing, 10 May 1644), SP 28/30/II fo. 172 (pay warrant for James Winter, 6 May 1645).

³² TNA, SP 28/41/III fo. 224 (payment to Thomas Fothergill, 21 Dec. 1646), SP 28/1A fos. 29, 38–9, 40–1, 64, 66–9 (pay warrants for regimental colonels, Aug. 1642).

English armies by Charles I for the expedition to the Île de Ré in 1627, though apparently he did not honour the bill.³³

However, it is well known that army wages were far from regularly paid in the Civil Wars.³⁴ Thomas Trapham, surgeon to Philip Skippon's regiment in Essex's army, was forced to petition the House of Commons in October 1644 for his arrears, whilst Lord Willoughby's surgeon, Isaac Demergue, was imprisoned for debt after his arrears were unpaid.³⁵ The failure to pay and supply regimental medical personnel potentially had a crucial impact on their army's military capabilities. For example, throughout summer 1644, Essex's army suffered from a complete lack of supplies, despite the earl's repeated requests.³⁶ By the time his army reached Lostwithiel, frequent deaths hampered their efforts to hold off royalist attacks because the surgeons were 'ill stored with provisions'.³⁷ On 1 November, four surgeons in Essex's army were referred to the Commissioners for Martial Affairs for ignoring orders to repair to the army shortly before the second battle of Newbury 'to the great Detriment of the Service'.³⁸ Two weeks previously, the neglected state of Essex's surgeons had been a matter of concern and it seems that the £4 advance they had received was not enough to convince them that their past and future wages would be honoured.³⁹

Eric Gruber von Arni argued that the royalists' lackadaisical approach to administration engendered insufficient medical provision but this assessment was based on sparse documentation surviving from the royalist headquarters at Oxford and, as Jonathan Worton highlighted, may not reflect the situation in the king's other armies and garrisons.⁴⁰ Recent historiography has shown that military administration in the king's camp was much more successful than previously thought, though the lack of evidence makes it impossible to tell if a uniform pattern of medical organization and pay existed in royalist armies.⁴¹ A pay establishment for the royalist garrison at Worcester in June 1643 allocated

³³ G. F. Hildanus, *Cista militaris* (London, 1674); J. Woodall, *The surgeons mate* (London, 1639), preface to 'Viaticum, being the path-way to the surgeons chest'; S. Young, *The annals of the Barber-Surgeons of London* (London, 1890), p. 405.

³⁴ Holmes, *Eastern Association*, pp. 146–7; I. Gentles, *The New Model Army* (Oxford, 1994), pp. 49 and 239–40; Firth, *Cromwell's army*, pp. 197–9.

³⁵ Historic Manuscripts Commission, *Thirteenth report, appendix, part I* (London, 1891), p. 187; *Journals of the House of Commons (JHC)*, III (1643–4), p. 658; TNA, SP 21/7 fo. 227 (Proceedings of the committee of both kingdoms, 9 Oct. 1644); Parliamentary Archives, HL/PO/JO/10/1/177 (petition of Isaac Demergue, 21 Dec. 1644).

³⁶ M. Wanklyn, *The warrior generals* (London, 2010), pp. 116–17 and 121.

³⁷ B. Whitelock, *Memorials of the English affairs* (4 vols., Oxford, 1853), I, p. 300.

³⁸ *JHC*, III (1643–4), p. 683.

³⁹ *Calendar of state papers domestic (CSPD)*, 1644–5, p. 25.

⁴⁰ Gruber von Arni, *Justice to the maimed soldier*, pp. 16–31; J. Worton, 'The royalist and parliamentary war effort in Shropshire during the First and Second English Civil Wars, 1642–1648' (Ph.D. dissertation, University of Chester, 2015), p. 216.

⁴¹ M. Wanklyn and F. Jones, *A military history of the English Civil War* (Abingdon, 2014), p. 18.

2s 6d per day for one surgeon for every horse regiment.⁴² During the same period, Sir William Russell (governor of Worcester) paid the surgeon of his foot regiment, Richard Addis, 5s a day, money to resupply his chest of medicaments and surgical instruments, and 10s a week for his apprentice (who was presumably acting as his mate).⁴³ At Lichfield, the surgeons seem to have been paid per cure, whilst Dr Whittaker the physician was paid £1 5s per week.⁴⁴ Elsewhere, fragmentary remains from a royalist account book suggests a standard rate: £10 each was paid to six surgeons but it is unclear what period of employment this sum covered.⁴⁵

II

Although Firth suggested that the wages paid to parliamentary physicians were suitable for 'a man of some standing in his profession', he claimed that those offered to surgeons were 'too small to secure really able men'.⁴⁶ Admittedly, surgeons sometimes found their wages unsatisfactory. In October 1655, Thomas Fothergill (surgeon to the Protector's regiment of horse) claimed his wages were 'farre short of a subsistence'.⁴⁷ However, the parliamentary surgeons' day-rate was the same as that accorded to a lieutenant of a foot regiment: an interesting comparison given that Firth concluded that 'the officers both of horse and foot were well paid'.⁴⁸ Furthermore, unlike infantry officers' wages, surgeons' wages responded to changes in the economic climate until 1658, when the Protectoral government was financially over-stretched.⁴⁹ At this time in Scotland, George Monck ordered his surgeons to be entered as privates in regimental muster rolls so that they could earn an extra 9d a day.⁵⁰ Surgeons' salaries in the parliamentary armies were certainly more generous than in the navy, where a surgeon received 30s a month and his mate 20s a month.⁵¹ These rates were raised to 50s and 30s respectively in 1653.⁵²

Yet, what makes Firth's claim particularly bold is that it is extremely difficult to discern what a surgeon might expect to be paid in this period. Early modern surgeons (and indeed physicians, though they seldom cared to admit it)

⁴² J. W. Willis Bund, ed., *Diary of Henry Townshend of Elmley Lovett, 1640-1663* (2 vols., London, 1920), II, p. 126.

⁴³ *Ibid.*, p. 153.

⁴⁴ I. Atherton, 'The accounts of the royalist garrison of Lichfield Close, 1643-1645', *Staffordshire Studies*, 18 (2007), pp. 63-96, at pp. 82-90.

⁴⁵ TNA, SP 28/143/III fos. 20a, 66a, and 68a (royalist account book, 19 Mar. to 13 June 1644).

⁴⁶ Firth, *Cromwell's army*, pp. 253-4.

⁴⁷ TNA, SP 18/101 fo. 14 (petition of Thomas Fothergill, 3 Oct. 1655).

⁴⁸ Firth, *Cromwell's army*, p. 186.

⁴⁹ *Ibid.*, pp. 184-7 and 254.

⁵⁰ *Ibid.*, p. 254.

⁵¹ J. J. Keevil, *Medicine and the navy* (2 vols., London, 1957-8), I, p. 213.

⁵² *Ibid.*, II, p. 8.

earned their living on a case-by-case basis by negotiating a contract with their patient (or the patient's family or friends), in which the practitioner received an agreed fee in return for the time their patient spent under their cure.⁵³ The fees agreed would vary according to the severity of the condition and the length of time over which treatment was administered. Contracts that appear lucrative at first sight often masked the fact that the surgeon might be treating the patient for several years.⁵⁴ Salaried positions were unusual and where they existed, a practitioner expected to supplement this with other commissions.⁵⁵ Surgeons stationed in garrison towns, for example, may have acquired clients from the civilian population upon whom they were billeted. As Cook noted, the prominence of a military position provided the opportunity to build up contacts and reputation, both of which might be used to expand a surgeon's civilian practice when he left the army.⁵⁶ Anne Digby demonstrated that at least from the eighteenth century, state-salaried positions were eagerly contested, despite sometimes low wages.⁵⁷ The dangers and hardships of war may have made army positions less attractive than state positions, but for those prepared to brave the risk, there were rewards to be had.

Indeed, loyalty to a cause brought the promise of material rewards beyond simple wages. Even surgeons like Trapham might be rewarded with an honorary MD, whilst after the Restoration, John Knight (surgeon to Prince Rupert's forces at Leicester in 1645) was appointed serjeant-surgeon to Charles II.⁵⁸ On 16 July 1649, the Commons passed an act enabling those who had served in their armies to use their pay debentures to purchase crown lands.⁵⁹ Trapham redeemed his debentures to acquire parcels of land in Lincolnshire.⁶⁰ Likewise, Daniel Judd, surgeon to Sir Arthur Hesilrige's regiment in the New Model Army, purchased several messuages in Middlesex.⁶¹ The acquisition of land brought the benefits of status, diversification of income and investment. Furthermore, like other officers, surgeons brought debentures well below their face-value from soldiers (for whom ready cash was more attractive) to acquire sizeable estates.⁶² Judd used eight soldiers' debentures to secure his purchases in Middlesex valued at £184 14s, whilst

⁵³ M. Pelling, *Medical conflicts in early modern London* (Oxford, 2003), pp. 246 and 267–9.

⁵⁴ *Ibid.*, pp. 263–5.

⁵⁵ Pelling, *Common lot*, p. 89.

⁵⁶ Cook, 'Practical medicine and the British armed forces', p. 8.

⁵⁷ A. Digby, *Making a medical living* (Cambridge, 1994), pp. 50, 119, and 230.

⁵⁸ C. Webster, *The Great Instauration* (London, 1975), p. 293; C. S. Knighton, 'Knight, John (*bap.* 1622, *d.* 1680)', *Oxford dictionary of national biography* (ODNB).

⁵⁹ C. H. Firth and R. S. Rait, eds., *Acts and ordinances of the Interregnum, 1642–1660* (3 vols., London, 1911), II, pp. 168–91.

⁶⁰ TNA, 121/3/3/118–119 (certificates of sales of crown lands to Thomas Trapham, 18 May 1653 and 26 May 1653).

⁶¹ TNA, E 121/3/4/95 (certificate for sale of crown land to Daniel Judd, 14 Feb. 1652).

⁶² I. J. Gentles, 'The debentures market and military purchases of crown land, 1649–1660' (Ph.D. dissertation, London, 1969), pp. 70–9.

more spectacularly, Henry Cleare and his son, also Henry, brought the manors of Ennerdale in Cumberland and Radnage in Buckinghamshire for £1,278 19s 9d using thirty-seven soldiers' debentures.⁶³

All this said, to suggest that meagre wages might put off able surgeons from joining Civil War armies presumes that such men would have only been attracted to the service by financial benefits. It is true that in some cases, parliament resorted to impressing surgeons and certainly individuals impressed to be soldiers were often unskilled or unsuitable men.⁶⁴ The same situation may have applied to impressed surgeons. However, for those who willingly volunteered, higher ideals may have over-ridden material concerns. Lawrence Loe, the earl of Essex's first staff surgeon, seems to have shared his master's objectives for the parliamentary coalition. He apparently allied himself to the Presbyterian movement in London, which looked to the earl for leadership until Essex's death in 1646.⁶⁵ Thomas Burton, surgeon to the Southwark White Auxiliaries of the London Trained Bands, was described in 1652 by no less a man than Oliver Cromwell as 'very honest and faithfull to the interest of the Commonwealth'.⁶⁶ Preambles couched in distinctly godly language preface the wills of parliamentary surgeons John Anthony, Jonathan Crosse, Bradbury Clarke, and Henry Barnwell.⁶⁷ Perhaps more instructively, a number of former parliamentary surgeons were practising non-conformity at the Restoration. The two Cleares were prosecuted for attending a Presbyterian conventicle at Kingston-upon-Thames in 1677 and Edward Atkinson was a close friend of the Socinian preacher John Knowles.⁶⁸ In 1665, Atkinson wrote a heart-breaking letter to Knowles following the death of his 'Deare, Deare, Deare wife' in which he took comfort in the 'great Satisfacc[i]on' she had found in attending the Independent congregation led by George Griffith in London during her last months.⁶⁹

Conversely, when William Clowes, serjeant-surgeon at the royalist army's headquarters in Oxford, begged to compound for his estates in 1646, he presented his royalism as an inevitability as the king's 'sworn servant and

⁶³ TNA, E 121/3/4/95; TNA, E 121/5/7/36 (certificate for sale of crown land to Henry Cleare, 20 Nov. 1650).

⁶⁴ Firth and Rait, eds., *Acts and ordinances*, 1, pp. 241–2; Carlton, *Going to the wars*, p. 68.

⁶⁵ T. Liu, *Puritan London* (London, 1986), p. 134; K. Lindley and D. Scott, eds., *The journal of Thomas Juxon, 1644–1647* (London, 1999), p. 21.

⁶⁶ TNA, SP 28/121A/III fo. 339 (muster roll of the Southwark White Auxiliaries, 16 Apr. 1644); London Metropolitan Archives, Ho1/ST/A/o67/001/19 (letter from Oliver Cromwell to St Thomas's Hospital, 1652).

⁶⁷ TNA, PROB 11/267 fos. 250v–251 (will of John Anthony, 17 Sept. 1657), PROB 11/211 fos. 31v–32 (will of Jonathan Crosse, 25 Jan. 1650), PROB 11/315 fos. 179v–180 (will of Bradbury Clarke, 25 Nov. 1664), PROB 11/293 fo. 20 (will of Henry Barnwell, 25 June 1659).

⁶⁸ Surrey History Centre, QS2/5/1677, m. 19 (Quarter Sessions Roll, Easter 1677); J. Foster, *Alumni Oxonienses, 1500–1714* (4 vols., Oxford, 1891), 1, p. 41; CSPD, 1655–6, pp. 113–14.

⁶⁹ TNA, SP 29/119/26/VI fo. 62 (letter from Edward Atkinson to John Knowles, 25 Apr. 1665).

surgeon for these 40 years'.⁷⁰ A more eccentric expression of royalism allegedly came from Edward Molins. Molins served as a surgeon with the royalist forces from the beginning of the war until he was captured at the siege of Arundel in January 1644. Nevertheless, his reputation as a lithotomist was such that Cromwell sought his treatment when suffering from a bladder stone in 1656.⁷¹ The Genovese ambassador, a friend of Cromwell, reported that Molins gave Cromwell a draught to relieve the pain and then turned him upside down three times in imitation of how Molins claimed the Protector had treated England. Molins refused any payment but asked for a drink, which he then used to toast King Charles.⁷²

It was not only surgeons of whom Firth held a low opinion. He also questioned whether the physicians were sufficiently qualified because few were fellows of the College of Physicians.⁷³ As Table 1 shows, that much can be verified. However, Margaret Pelling has shown that in the seventeenth century there was 'a lack of real difference in educational attainment between Fellows and a significant number of outsiders'.⁷⁴ The College's role was simply to license practitioners of physic within a seven-mile radius of London and so prosecution of those who practised without their licence took precedence over other activities such as literary production or anatomy lectures.⁷⁵ Moreover, although the most important academic centres for medical learning were located abroad, the College limited those with qualifications from foreign universities to becoming licentiates and censored continental authors in favour of the classical greats.⁷⁶

Considering Gruber von Arni's assertion that the number of graduate physicians in England was 'abysmally low' at this time, then Table 1 might give a brighter view of Civil War physicians' educational credentials.⁷⁷ That said, university was not the only method of qualification. Many physicians learnt by apprenticeship and even university-educated physicians increasingly undertook practical apprenticeships alongside academic study.⁷⁸ In fact, former Civil War soldier-turned-physician Thomas Sydenham recommended apprenticeships over attendance at university for would-be physicians.⁷⁹

⁷⁰ M. A. E. Green, ed., *Calendar of the proceedings of the committee for compounding, 1643–1660* (5 vols., London, 1889–92), II, p. 1567.

⁷¹ G. C. R. Morris, 'Molins, Edward (1610?–1663)', *ODNB*.

⁷² C. Prayer, ed., 'Oliviero Cromwell dalla battaglia di Worcester alla sua morte', *Atti Società Ligure Storia Patria*, 16 (1882), pp. 366–8; G. C. R. Morris, 'Which Molins treated Cromwell for stone – and did not prescribe for Pepys?', *Medical History*, 26 (1982), pp. 429–35, at p. 428.

⁷³ Firth, *Cromwell's army*, p. 254.

⁷⁴ Pelling, *Medical conflicts*, p. 142.

⁷⁵ *Ibid.*, pp. 1–2 and 102.

⁷⁶ *Ibid.*, pp. 142 and 167–8.

⁷⁷ Gruber von Arni, *Justice to the maimed soldier*, p. 11.

⁷⁸ Pelling, *Common lot*, pp. 237–8; A. Wear, *Knowledge and practice in English medicine, 1550–1680* (Cambridge, 2000), p. 471.

⁷⁹ Pelling, *Common lot*, p. 238.

Table 1 *Physicians in Civil War armies*

Name	Army	London College of Physicians status (brackets indicates status after army service)	Academic qualification (brackets indicates qualification after army service)
Nathaniel Chamberlain	Earl of Essex	—	BMed Oxford 1636
Richard Gardiner	Earl of Essex	—	—
John King	Earl of Essex	—	MD Leiden 1629
Paul de Laune	Earl of Essex	Fellow 1618	MD Padua 1614
Anthony Metcalfe	Earl of Essex	—	—
Francis Neville	Earl of Essex	—	—
Edward Odling	Earl of Essex	—	(MD Cambridge 1632 by royal letter)
Dr [John] Pordage	Earl of Essex (Windsor garrison)	—	MD Leiden 1639
Samuel Read	Earl of Essex	—	Entered Leiden 1632
Thomas Sheafe (may not have served)	Earl of Essex	Fellow 1637	MD Cambridge 1636
John St John	Earl of Essex	—	MD Padua 1640
Adam Stryall	Earl of Essex/New Model	—	—
Edward Emily	Eastern Association	Licentiate 1641 (Fellow 1647)	MD Leiden 1640
Henry Glisson	Eastern Association	(Honorary Fellow 1664)	MD Cambridge 1639
William Staines	Eastern Association	Fellow 1641	MD Cambridge 1639

Table 1 (Cont.)

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ISMINI PELLIS

Name	Army	London College of Physicians status (brackets indicates status after army service)	Academic qualification (brackets indicates qualification after army service)
John Pratt	Southern Association	(Candidate 1649) Had appeared for examination in 1636 but too few censors were available	MD Cambridge 1645
Henry Hayhurst	Northern Association	—	No medical degree but BA Oxford 1619
John Troutbeck	?Northern Association/ New Model	—	(MD Cambridge 1661 by royal letter)
John Baber	New Model	(Candidate 1651, Fellow 1657)	MD Leiden 1648
Samuel Barrow	New Model	—	—
Claudius Fenwick	New Model	—	MD Franeker 1647
John French	New Model	(Examined for membership 1648 but no admittance record)	(MD Oxford 1648)
William French	New Model	—	(MD Cambridge 1647)
Jonathan Goddard	New Model	Fellow 1646	MD Cambridge 1643
Thomas Payne	New Model	—	—
John Short	New Model	—	Entered Leiden 1639
Joseph Waterhouse	New Model	—	(Rewarded MD Oxford 1651)
Dr Massey	Plymouth garrison (parliamentarian)	—	?
John Hall	Plymouth garrison (parliamentarian)	—	?
Francis Goddard	Oxford Army (royalist)	—	MD Oxford 1641

Samuel Turner	Oxford Army (royalist)	—	MD Padua 1611
Dr Whittaker	Lichfield Garrison (royalist)	?	?

Sources: TNA, SP 18/131 fo. 59 (petition from Henry Hayhurst, 1656), SP 28/3B/II fos. 440 and 442, SP 28/7 fo. 335 (pay warrant for Francis Neville, 2 June 1643), SP 28/11/II fo. 17 (payment to Samuel Read, 1643), SP 28/24 fo. 62 (payments to Henry Glisson, 8 Apr. to 14 July 1644), SP 28/25 fo. 229 (pay warrant for Edward Emily, 14 Aug. 1644), SP 28/28 fo. 203 (pay warrant for William Staine/Stane, 12 Mar. 1645), SP 28/29/I fo. 9, SP 28/29/II fo. 319 (pay warrant for Anthony Metcalfe, 7 Apr. 1645), SP 28/35/III fo. 380 (payment to John St John, 1645), SP 28/36/II fos. 145–6 (pay warrants for Thomas Payne and William French, 6 Feb. 1646), SP 28/36/V fo. 597 (certificate of service for Adam Stryall, 12 Dec. 1642), SP 28/42/I fo. 106 (certificate from Mr Trootbeck, 3 Oct. 1646), SP 28/62/I fo. 40, SP 28/70/III fo. 595 (pay warrant for John Baber, 11 Sept. 1650), SP 28/80/I fo. 8 (pay warrant for John Short, 5 Aug. 1651), SP 28/125/III fo. 345 (payment to Claudius Fenwick/Phenwithe, 1648–50), SP 28/126/I fo. 57 (Windsor garrison accounts, 1642–4), SP 28/128/XXVI fo. 5 (Plymouth garrison accounts, 1645–8), SP 28/144/10 fo. 2a (payment to John King, 5–19 July 1642); *JHC*, III (1643–4), p. 150; *CSPD*, 1651, p. 251; Green, ed., *Committee for compounding*, III, pp. 2242–3; Gruber von Arni, *Justice to the maimed soldier*, pp. 20, 27, 38, and 76; A. L. Wyman, ‘Barrow, Samuel (1625?–1683)’, *ODNB*; P. Elmer, ‘French, John (c. 1616–1657)’, *ODNB*; M. Jansson, ‘Turner, Samuel (d. 1647?)’, *ODNB*; W. Munk, *The roll of the Royal College of Physicians of London* (2 vols., London, 1861), I, pp. 160, 206, 231, 240, 244–5, 277, and 325; Royal College of Physicians of London, *Annals*, III (1608–47), fo. 163a, and IV (1647–82), fos. 18a, 20b, and 26a; Foster, *Alumni Oxonienses*, I, p. 258, II, p. 575, IV, p. 1579; J. Venn, *Alumni Cantabrigienses*, part 1 (4 vols., Cambridge, 1922–7), II, pp. 179, 223, and 226, III, pp. 275 and 391, IV, pp. 55, 143, and 268; R. W. Innes Smith, *English-speaking students of medicine at the University of Leyden* (London, 1932), pp. 10, 83, 134, 185, 190, and 211; D. Prögler, *English students at Leiden University, 1575–1650* (Abingdon, 2016), p. 194n.

Apprenticeship has suffered from later social devaluation, which might partly explain the negative portrayal of Civil War surgeons, as this was their main method of education.⁸⁰ In the London Barber-Surgeons' Company, apprentices were bound to liverymen for at least seven years, which consisted of on-the-job training accompanied by teaching and personal study. Apprentices were admitted as freemen at the end of their term of service but none was allowed to practise surgery without first being examined by the Company.⁸¹ Furthermore, regular dissections and lectures took place at Barber-Surgeons' Hall, attendance at which was (apparently) compulsory for all the Company's surgeons.⁸² Tables 2 to 6 give a rough indication of the proportion of Civil War surgeons who were free of the London Barber-Surgeons' Company.⁸³ It must be stressed that this evidence should not be used too definitively, as it is sometimes impossible to make clear identifications between a particular Civil War surgeon and a man of the same name in the Barber-Surgeons' Company.

What of the education of the remainder? Taking the Eastern Association as an example, barber-surgeons' companies have been found in Ipswich, Lincoln, Norwich, and St Albans.⁸⁴ Furthermore, large numbers of barber-surgeons existed in the sizeable corporate towns of King's Lynn, Colchester, and Great Yarmouth, which suggests that although surgeons did not have their own company, they may have been included in conglomerate companies with related crafts. This was certainly common practice in other parts of the country, such as the north-west.⁸⁵ Unfortunately, very few records for these companies survive.⁸⁶ The recording of one 'Andreas Vanderlas' as warden to the Norwich Barber-Surgeons' Company in 1645 provides an intriguing hint that many of the surgeons of the Eastern Association, which was largely raised in the Eastern Counties, may have come through the ranks of East Anglian barber-surgeons' companies.⁸⁷ Was this the same Andrew Vanderlash who was surgeon to Sir John Norwich's troop in the Eastern Association and paid out of the Norwich weekly assessment?⁸⁸

⁸⁰ Ibid., pp. 232 and 237.

⁸¹ Young, *Annals of the Barber-Surgeons*, p. 260.

⁸² Ibid., p. 119.

⁸³ Those made free by methods other than apprenticeship are noted, excepting those made free by patrimony because it is not unreasonable to suggest that they learnt from their surgeon fathers. A Daniel Judd was free of the Company by apprenticeship but served a hotpresser, whilst a Humphrey Hughes was free of the Company by patrimony but his father was a haberdasher, so these have been discounted as the Civil War surgeons until further connections can be made (see Table 5).

⁸⁴ M. Pelling, 'Barber-surgeons' guilds and ordinances in early modern British towns', p. 5, <http://practitioners.exeter.ac.uk/>, accessed 7 June 2016.

⁸⁵ Pelling, *Common lot*, p. 209.

⁸⁶ Pelling, 'Barber-surgeons' guilds', pp. 2–3.

⁸⁷ C. Williams, *The masters, wardens, and assistants of the Guild of Barber-Surgeons of Norwich* (Norwich, 1900), p. 15; Holmes, *Eastern Association*, p. 164.

⁸⁸ TNA, SP 28/26/III fo. 312 (payment to Andrew Vanderlash, 18 Jan. 1645).

Table 2 *Surgeons in the earl of Essex's army*

Freeman of the London Barber-Surgeons' Company	Identifiable surgeons not in the London Barber-Surgeons' Company	Other unidentifiable surgeons
?William Alley/Allen	John Anthony	Bromfield
James Bricknell	Stephen Beddard	Mapheston
?John Browne	Nicholas Boden	Mr Purlervant
[?Thomas] Burton	Matthew Broad	Mr Rondes
Henry Cleare Snr	John Broughton	Mr Stanley
?Edward Cooke	John Cleare	
Roger Dixon (translated)	James Cooke	
John Franklin	James Cooke	
Nathaniel Harris	John Fletcher	
Nicholas Heath	Peter Francis	
Timothy Langley	Meredith Jones	
Lawrence Loe	Thomas Kinker	
Ralph Nicholson	Thomas Lugg	
John Rice	William de Margey (possibly the same man as below)	
William Roberts	Isaac de Morgane/Demergue	
?Mr [?Christopher] Southwell	Thomas Noxe	
?James Swright/?Wright	William Parkes	
Thomas Symonds	Llewellyn Price	
Thomas Trapham	Francis Rishworth	
?Hugh Ward	Peter de Sallenova	
James Winter	Richard Searle	
?John Woodward	Isaac Smitheis/Smythes	

Table 2 (Cont.)

Freeman of the London Barber-Surgeons' Company	Identifiable surgeons not in the London Barber-Surgeons' Company	Other unidentifiable surgeons
	William Stannard Richard Thurston Christopher Tiack John Waylett Robert Woodward	

Sources: E. Peacock, ed., *The army lists of the roundheads and cavaliers* (London, 1874), pp. 27–9, 31, 34–5, 37, 42, 44–5, and 48; TNA, SP 28/2A/1 fos. 104 and 145 (pay warrants for Richard Thurston, 3 Sept. 1642, and Hugh Ward, 5 Sept. 1642), SP 28/2B/II fos. 420–1 (pay warrants for James Cooke and James Swright/Wright, 18 Oct. 1642), SP 28/2B/III fo. 534 (commission for Peter Sallenova, Sept. 1642), SP 28/3A/1 fo. 45 (payment to Thomas Kinker, 9 Nov. 1642), SP 28/3A/III fo. 285 (pay warrant for William de Margey/de Morger, 9 Nov. 1642), SP 28/3B/1 fo. 397 (pay warrant to Roger Dixon, 18 Nov. 1642), SP 28/4 fos. 175 and 358 (pay warrants for Isaac de Morgan/Demergue, 3 Dec. 1642, and for Ralph Nicholson, 27 Dec. 1642), SP 28/5 fos. 126, 310, and 341 (pay warrants for Henry Cleare, 21 Jan. 1643, John Waylett, 27 Feb. 1643, and Isaac Smitheis/Smythes, 28 Feb. 1643), SP 28/6/1 fo. 92 (pay warrant for Thomas Symonds, 1 Mar. 1643), SP 28/6/II fo. 277 (pay warrant for Llewellyn Price, 13 Apr. 1643), SP 28/7 fos. 85 and 316 (pay warrants for Nicholas Heath, 25 May 1643, and John Fletcher, 23 June 1643), SP 28/9 fo. 364 (bill for Francis Rishworth, 21 Aug. 1643), SP 28/18/1 fo. 97 (pay warrant for Peter Francis, 18 Sept. 1644), SP 28/10 fos. 21 and 30 (billeting account for Robert Woodward, 1 Aug. to 2 Sept. 1643 and pay warrant for William Alley/Allen, 14 Sept. 1643), SP 28/16/1 fo. 108 (pay warrant for Timothy Langley, 26 June 1644), SP 28/20 fo. 41 (Reading garrison accounts, 1644), SP 28/29/II fos. 334–5 (pay warrant for John Franklin, 11 Apr. 1645), SP 28/121A fo. 133 (Warwick garrison accounts, 1643–4), SP 28/122/II fo. 367 (payment to Stephen Beddard, 14 Apr. 1645), SP 28/126 fos. 10 and 64v (Windsor garrison accounts, 1642–5); SP 28/127 fo. 310v (Aylesbury garrison accounts, 1643–4), SP 28/128/XXVI fo. 6 (Plymouth garrison accounts, 1645–8), SP 28/129/VIII fos. 6v–7 (Portsmouth garrison accounts, 1642–3), SP 28/146/XVIII fo. 27 (pay warrant to Mr Bromfield, 14 Oct. 1643), SP 28/145 fo. 249 (payment to Mr Burton, 31 July 1642); *JHC*, III (1643–4), p. 658; Guildhall Library (GL), MS 5265/1 (Register of freedom admissions, 1522–1665); GL, MS 5255/1 (Wardens' accounts and audit books, 1603–59), unpag.

Table 3 *Surgeons in the Eastern Association*

Freeman of the London Barber-Surgeons' Company	Identifiable surgeons not in the London Barber-Surgeons' Company	Other unidentifiable surgeons
Matthew Birchinall	Richard Barton	Mr Berry
Enoch Bostock (translated)	Edward Atkinson	Mr Boyer
?Samuel Browne	Joyce Bennett	Mr Fudge
Bradbury Clarke	Timothy Bond	Mr Goodrich
?William Clarke	James Bowman	Mr Gutteridge
Joseph Echell	Thomas Bullock	Mr Lindsey
?Mr [?Richard] Elliot	Jonathan Crosse	Mr Meyring
Thomas Fothergill (by redemption)	Edward Elsing	Mr Sandford
?Mr [?Christopher] Gouldesborough	Basset Jones	Mr Siler
?John Nichols	William Kseamd	Mr Timms
Nicholas Seres	Francis Loyal	
John Waylett	Henry Lloyd	
John Wyther	William Le Neave	
	Ar. Purlevant	
	Abraham Roe	
	Lodowick Sommervell	
	Thomas Tylor	
	John Vandale	
	Andrew Vanderlash	
	John Walker	

Table 3 (Cont.)

Freeman of the London Barber-Surgeons' Company	Identifiable surgeons not in the London Barber-Surgeons' Company	Other unidentifiable surgeons
	John Wasse Edward Webb	

Sources: TNA, SP 28/5 fo. 310 (pay warrant for John Waylett, 27 Feb. 1643), SP 28/12/II fo. 204 (pay warrant for Edward Elsing, 21 Feb. 1644), SP 28/13/II fo. 200 (pay warrant to for James Bowman, 4 Sept. 1643, SP 28/14/1 fo. 180 (account of Thomas Forthergill, Jan. to Apr. 1644), SP 28/15/II fos. 275 and 279 (pay warrants to William Le Neave, 13 May 1644, and Joseph Echell, 14 May 1644), SP 28/17/III fos. 348 and 357 (payments to Mr Fudge, 15 Aug. 1644, and Mr Siler, 14 Aug. 1644), SP 28/19/III fos. 346 and 387 (pay warrants for Lodowick Sommervell, 16 Oct. 1644, and Thomas Bullock, 20 Oct. 1644), SP 28/20/II fo. 181 (pay warrant for John Vandale, 5 Nov. 1644), SP 28/20/III fo. 353 (pay warrant for William Kseamd, 24 Nov. 1644), SP 28/21/1 fos. 49, 54, 76, and 101 (payments to William Clarke, 14 Jan. 1645, Timothy Bond, 10 Dec. 1644, Mr Sandford, 18 Sept. 1644, and Edward Atkinson, 12 Dec. 1644), SP 28/23/1 fos. 231 and 288 (payments to Mr Lindsey and Mr Gouldesborough, Mar. 1645), SP 28/24/1 fo. 74 (payment to Mr Gutteridge, May 1644), SP 28/24/IV fo. 519v–520 (payments to Mr Goodrick, 23 Mar. 1645, and Edward Webb, 6 July 1644), SP 28/25/1 fos. 135 and 138 (payments to Bradbury Clarke, 13 Aug. 1644, and Francis Loyal, 31 Aug. 1644), SP 28/25/II fos. 217 and 311 (payments to John Walker, 9 Oct. 1644, and Thomas Tylor, 20 June 1644), SP 28/25/III fos. 1 and 403 (pay warrants for Jonathan Crosse, 27 Aug. 1644, and Nicholas Seres, 25 Mar. 1644, SP 28/26/III fos. 312 and 320 (pay warrants for Andrew Vanderlash, 18 Jan. 1645, and Enoch Bostock, 2 Aug. 1644), SP 28/35/III fo. 371 (payments to Henry Lloyd, Ar. Purlevant, and Basset Jones, undated), SP 28/121A/III fos. 13 and 15 (Burleigh House garrison accounts 1643–4), SP 28/121B/II fos. 156 and 158 (Newport Pagnell garrison accounts, 1645), SP 28/122/1 fo. 171 (payment to John Wasse, 2 May 1645), SP 28/127/1 fo. 18 (Newport Pagnell garrison accounts, 1646), SP 28/133/1 fo. 98 (King's Lynn garrison accounts, 1646), SP 28/144/III fo. 7a (payment to Samuel Browne, Jan. 1645), SP 28/145 fos. 264–84 (Eastern Association account book, 1644–5); GL, MS 5265/1; GL, MS 5255/1.

Table 4 *Surgeons in the Southern Association*

Freeman of the London Barber-Surgeons' Company	Identifiable surgeons	
	not in the London Barber-Surgeons' Company	Other unidentifiable surgeons
?Richard Allen Alexander Aurelius	Thomas Aisernelry James Brichett	Mr Bicknor Mr Hannam (?Elnathan Hannam)
Henry Cleare Jnr ?John Watts	Nicholas King Peter Ray James Stocke	Mr Harris

Sources: L. Spring, *Waller's army* (Farnham, 2007), pp. 75, 79, 109, 129, 156, and 159–60; TNA, SP 28/35/iv fo. 635 (payment to Henry Cleare, 25 Apr. 1645), SP 28/144/v fo. 80a (payment to Thomas Aisernelry, 19 Aug. 1644); GL, MS 5265/1; GL, MS 5257/5 (Barber Surgeons' Company court minute book, 1621–51), fo. 391.

That said, Pelling discovered during her research into the Norwich barber-surgeons that large numbers lay outside the formal procedures of apprenticeship, freedom, and guild membership.⁸⁹ Masters could not enrol an apprentice into a company without paying 'extortionate' fees and many avoided this if possible, whilst the desire to enforce guild procedures varied with time.⁹⁰ Apprenticeships operating outside the auspices of municipal craft companies did not necessarily produce less-skilled surgeons. The Elizabethan military and naval surgeon William Clowes (father of Charles I's serjeant-surgeon), whose treatise on gunshot wounds *A proved practice for all young surgeons* became a standard work for the generation of Civil War surgeons, had not served a formal apprenticeship in a barber-surgeons' company.⁹¹ Clowes was not afraid to criticize ignorant surgeons and though he may have been biased because of his own experience, he claimed to know many surgeons who had no formal training but practised 'honestly, carefully, painfully, and skilfully'.⁹²

III

It remains to consider how Civil War medical practitioners may have fared in practice. Many of the daily medical conditions that they would have

⁸⁹ Pelling, *Common lot*, p. 208.

⁹⁰ *Ibid.*, pp. 211–12.

⁹¹ I. G. Murray, 'Clowes, William (1543/4–1604)', *ODNB*. Clowes's treatise was reprinted as late as 1637 as *A profitable and necessarie booke of observations*.

⁹² Pelling, *Common lot*, p. 255.

Table 5 *Surgeons in the New Model Army*

Freeman of the London Barber-Surgeons' Company	Identifiable surgeons not in the London Barber-Surgeons' Company	Other unidentifiable surgeons
?William Alley/Allen	Henry Barnwell	Mr Bettris
Alexander Aurelius	Stephen Beddard	Mr Browne
Samuel Bradshaw	Matthew Broad	Mr Knowles
Henry Cleare snr	Humphrey Cole	Mr Simmes
Henry Cleare jnr	William Dodd	
(?James Cleare)	James Donaldson	
?Edward Cooke	Thomas Fothergill	
?Mr [?Matthew] Coutch/?Crouch	Nathaniel Franks	
Thomas Crutchley	Richard Gwyn	
Thomas Harding	Thomas Harvest	
Giles Hicks (translated)	Richard Hinges	
?Mr [?Edmund] Higgs	John Hubbard	
Richard Morley	Humphrey Hughes	
Guy Noble	Meredith Jones	
John Payne	Daniel Judd	
Daniel Pew/Pugh	Thomas Lawrence	
Robert Rand	Robert Mustow	
Thomas Symonds	Valentine Nickson	
Thomas Trapham	Francis Prujean	
Richard Tompkins	Francis Rishworth	

James Winter

Arnold Sallenoza
Isaac Smitheis/Smythes
Bonham Spencer
Thomas Standford
Walter Stephenson
Sandys Suter
Walter Thompson
Mr [?]John] Walker
Edward Wentworth

Sources: TNA, SP 28/30/II fos. 130 and 172 (pay warrants for Mr Browne, 7 May 1648 and James Winter, 6 May 1645), SP 28/35/III fos. 344 and 417 (Northampton garrison accounts, SP 28/42/II fo. 180 (quartering for Edward Wentworth, 1646), SP 28/41/III fo. 224 (payment to Thomas Fothergill, 21 Dec. 1646), SP 28/42/IV fo. 580 (payment to Francis Rishworth, 27 July 1646), SP 28/51/I fo. 111 (list of general officers, 10 Feb. 1648), SP 28/53/II fo. 164 (pay warrant for Richard Morley, 17 Apr. 1648), SP 28/53/III fos. 413, 430, 434, 436, and 463 (pay warrants for Walter Stephenson, 17 Apr. 1648, Henry Cleare snr, Richard Tompkins, and Thomas Symonds, 12 Apr. 1648, and Henry Cleare jnr, 24 Apr. 1648), SP 28/54/II fo. 155 (certificate from Valentine Nickson, 12 Apr. 1648), SP 28/54/II (pay warrant for Matthew Broad, 25 May 1648), SP 28/57/IV fo. 538 (quartering for Mr Simmes, 1646), SP 28/66/III fo. 475 (payment to Arnold Sallenoza, 25 Mar. 1650), SP 28/67/III fos. 404–22 (pay warrants for Bonham Spencer, Mr Croutch, Mr Bettris, Thomas Crutchley, William Dodd, Mr Knowles, Meredith Jones, Nathaniel Frankes, and Richard Hinges, 2 May 1650), SP 28/67/IV fos. 638–40 (pay warrants for Daniel Judd and Mr Higgs, 28 May 1650), SP 28/70/II fo. 222 (pay warrant for Edward Cooke, 2 Aug. 1650), SP 28/70/III fos. 585 and 589 (pay warrants for Daniel Pew/Pugh, 11 Sept. 1650, and Robert Rand, 11 Sept. 1650), SP 28/74/IV fo. 854 (pay warrant for Mr Walker, 22 Feb. 1651), SP 28/77/IV fos. 679–99 and 787 (pay warrants for Thomas Harding, Thomas Harvest, Humphrey Hughes, Henry Barnwell, John Hubbard, Walter Thompson, Isaac Smitheis/Smythes, Thomas Standford, John Payne, Thomas Lawrence, and Sandys Suter, 23 May 1651, and Robert Mustow, 30 May 1651); SP 28/124/II fos. 316 and 383 (musters at Newcastle, 1648), SP 28/124/II fo. 332 (list of officers who left Colonel Graves's regiment, 14 June 1648), SP 28/125/I fo. 15 (Tynemouth Castle garrison accounts), SP 28/125/II fo. 197 (Tynemouth Castle garrison accounts), SP 28/126/I fos. 73v and 130v–131 (Aylesbury garrison accounts, July 1646 to Dec. 1646); Gruber von Arni, *Justice to the maimed soldier*, p. 80; GL, MS 5265/1.

Table 6 *Surgeons in royalist armies*

Freeman of the London Barber-Surgeons' Company	Identifiable surgeons not in the London Barber-Surgeons' Company	Other unidentifiable surgeons
William Clowes	Richard Addis	Mr Bowman
Edward Hales	Thomas Brugis	Monsieur Parsonnes
Henry Johnson	Stephen Fosset	Mr Spooner
John Knight	Richard Irish	Thorneton
Edward Molins	Gervis Nevill	
Humphrey Painter	James Rummage	
?William Thorpe	John Shelvock	
Mr [?Richard] Watson	James Thornehill	
Richard Wiseman		

Sources: Green, *Committee for compounding*, II, 1567, III, pp. 2290–1; TNA, PROB 11/197 fos. 66v–67r (will of Edward Hales, 7 July 1646); J. Birch, *Military memoir of Colonel John Birch*, ed. T. Webb and J. Webb (London, 1873), p. 208; Atherton, ‘Royalist garrison of Lichfield Close’, pp. 82 and 86–7; Morris, ‘Molins, Edward’, ODNB; TNA, SP 28/143 fos. 20a and 66a; Wiseman, *Severall chirurgicall treatises*, passim; Gruber von Arni, *Justice to the maimed soldier*, pp. 23, 26, and 29; Willis Bund, ed., *Diary of Henry Townshend*, p. 153; Worton, ‘War effort in Shropshire’, p. 217; GL, MS 5265/1.

encountered, such as ulcers, fractures, ‘fluxes of the belly’, dislocations, and even amputations, would have been common civilian complaints. However, Wiseman contended that ‘Wounds made by Gun-shot are the most complicate sort of Wounds that can be inflicted’, a notion with which John Woodall concurred.⁹³ Woodall, surgeon-general to the East India Company and a former military surgeon, recalled that when the privy council instructed the London Barber-Surgeons’ Company to impress surgeons experienced in curing gunshot wounds for the voyage to the Île de Ré, ‘by reason of that long and happy peace that our Nation had enjoyed, many good Surgeons being put to it at the first, were likely to have been found somewhat to seek therein’. He thought the same could be said on the eve of the Civil Wars.⁹⁴

With war against Scotland looming in 1639, Woodall republished *The surgeons mate*. Like Clowes’s treatise, Woodall’s work was probably indispensable to Civil War surgeons. The royalist surgeon Thomas Brugis certainly admitted to following Woodall’s methods.⁹⁵ The wide availability of continental literature in

⁹³ Wiseman, *Severall chirurgicall treatises*, p. 409; Woodall, *Surgeons mate*, p. 94.

⁹⁴ Woodall, *Surgeons mate*, preface to ‘Viaticum’, sig. q2.

⁹⁵ T. Brugis, *Vade mecum* (London, 1651), p. 105.

Britain prior to the Civil Wars is a well-known phenomenon to military historians.⁹⁶ Yet, Civil War medics too were well read in the medical works of leading continental military practitioners. The works of Wiseman and James Cooke (surgeon to the parliamentary garrison at Warwick) incorporated the techniques of men like Hieronymus Fabricius, Ambroise Paré, and Johannes Scultetus.⁹⁷ The literature of the Military Revolution was not merely confined to drillbooks.

Some Civil War surgeons may have gained previous experience by enlisting in the English regiments serving in Protestant armies on the continent. No evidence of this has yet been traced, though some were fortunate enough to learn from those with prior military experience. For example, the younger Clowes had been apprenticed to his father, whilst Timothy Langley (staff surgeon to Essex's army from June 1644) had been apprenticed to Henry Boone, Woodall's pupil.⁹⁸ Several surgeons honed their skills by serving in the war against Scotland, including Loe and Langley.⁹⁹ The Civil Wars were themselves a learning experience. Henry Johnson, surgeon to the king's own troop of horse, took his apprentice William Gill with him on campaign in the Civil Wars, whilst many of the unnamed surgeons' mates in pay warrants must also have been apprentices.¹⁰⁰

It was not just apprentices who learnt on the job. As Cook argued for the later seventeenth century, military service not only provided a training ground for medical practitioners but also reinforced the growing trend towards empirical, practical, 'clinical' medicine.¹⁰¹ Military practitioners dealt with large numbers of men at once and thus had little time for the physic of learned physicians, which sought the causes of disease in the unique physiological conditions of each person's constitution. Instead, they sought specific cures for specific diseases, which led to uniformity in diagnosis and treatment.¹⁰² Cook himself noted the involvement of Civil War practitioners such as John French in the new 'chemical medicine', whilst according to Stephen Rutherford, the writings of Civil War practitioners are examples of 'evidence-based practice'. These men demonstrated good understandings of physiology, anatomy, antiseptics, infection control, and pharmacology, and embraced forward-thinking and scientific

⁹⁶ B. Donagan, 'Halcyon days and the literature of war: England's military education before 1642', *Past and Present*, 147 (1995), pp. 65–100, at p. 97.

⁹⁷ Wiseman, *Severall chirurgicall treatises*, pp. 66, 122 and 341; J. Cooke, *Mellificium chirurgie* (London, 1648), pp. [x]–[xi] and 28.

⁹⁸ A. Griffin, 'Clowes, William (1582–1648)', *ODNB*; GL, MS 5265/1.

⁹⁹ Peacock, ed., *Army lists*, pp. 74 and 83. 'Trinity' is almost certainly a misreading of 'Timothy'.

¹⁰⁰ Birch, *Military memoir*, p. 208.

¹⁰¹ Cook, 'Practical medicine and the British armed forces', p. 16.

¹⁰² *Ibid.*, p. 2.

principles that enabled them to become 'pioneers of medical practice'.¹⁰³ Men like the captain of a company of dragoons on whom Wiseman experimented with an innovative dressing survived who otherwise would have perished.¹⁰⁴

That said, even the most competent practitioners could do little in the face of the epidemics that ripped through soldiers' quarters and paralysed armies.¹⁰⁵ Failure to treat disease undoubtedly had a severe impact on an army's capability, though military historians must be cautious of exaggerating its effects. As Malcolm Wanklyn argued, tactical contingency was also important. He pointed out that whilst the New Model Army was severely hit by the 'New disease' (probably typhus) during winter 1645, that army still outnumbered their opponents by a considerable margin but it took Sir Thomas Fairfax four months to force the surrender of the royalist army in the west and another two months to capture the major garrisons.¹⁰⁶

No doubt some surgeons were incompetent. Firth cited the case of Mr Fish, a former surgeon's mate who had been forced to resign to avoid court martial 'for some miscarriages' but was later appointed surgeon of the artillery in Scotland. Monck begged Cromwell to rescind Fish's commission, complaining that Fish was 'unfit to take such an employ upon him' because he was 'never bound prentice to the profession'.¹⁰⁷ Yet, Monck's letter infers that there were plenty of other competent surgeons who could have been appointed in Fish's stead. Elsewhere, Holmes backed up his claim that 'a number of chirurgeons were unqualified' with an Indemnity Committee case in which James Bowman, surgeon to the earl of Manchester, was prosecuted by Eber Birch of Beverley for using physick as well as surgery.¹⁰⁸ However, although surgeons were theoretically confined to performing outward manual procedures, they had long assumed certain privileges in the practice of physick. This concerned physicians, who jealously guarded their right to administer internal medicine.¹⁰⁹ Woodall argued that in military contexts where a physician may not be available, it was 'uncharitable to forbid an expert Surgeon at any time, or in any place, the use of the instruments and medicines which are necessary to his art, for the curing of his patients'.¹¹⁰ It appears that Bowman was not so much unqualified

¹⁰³ Ibid., p. 15; S. M. Rutherford, 'Ground-breaking pioneers or dangerous amateurs? Did early modern surgery have any basis in medical science?', in I. Pells, ed., *New approaches to the military history of the English Civil War* (Solihull, 2016), pp. 153–85, at p. 156.

¹⁰⁴ Wiseman, *Severall chirurgicall treatises*, p. 378.

¹⁰⁵ B. Donagan, 'The casualties of war: treatment of the dead and wounded in the English Civil War', in I. Gentles, J. Morrill, and B. Worden, *Soldiers, writers and statesmen of the English Revolution* (Cambridge, 1998), pp. 114–32, at pp. 120–1.

¹⁰⁶ Wanklyn, *Warrior generals*, p. 177.

¹⁰⁷ Firth, *Cromwell's army*, p. 254.

¹⁰⁸ Holmes, *Eastern Association*, pp. 174 and 284n; TNA, SP 24/35 fo. 363 (*Bowman v. Birch*, 15 Sept. 1648).

¹⁰⁹ Pelling, *Medical conflicts*, p. 53.

¹¹⁰ Woodall, *Surgeons mate*, pp. [xv]–[xvi].

as, like many others amongst the Indemnity papers, being prosecuted for the necessities of war.

Further investigation into the case of Edward Cooke is similarly revealing. Firth highlighted that Cooke had been accused of incompetence and neglect of his patients.¹¹¹ Cooke had served as surgeon-general to the army in Ireland but this case refers to the Flanders campaign conducted by the Protectorate in 1657–9.¹¹² Cooke had been sent to Dover to supervise the reception of casualties from Mardyke and Dunkirk but his efforts were hampered by the poor planning and lack of funding that surrounded the campaign.¹¹³ Complaints arose about the standard of care in Dover and Cooke was forced to answer for it. In his defence, he appended a statement signed by thirty-one of his patients, who testified to his personal skill and care.¹¹⁴ Moreover, forty wounded soldiers in Dover subsequently petitioned to be removed to London not due to neglect from Cooke and his army assistants, by whom they ‘bin Carefully and duely dressed’, but because they had been recently transferred to the care of local civilian surgeons, one of whom was ‘a public Drunkard’ and the other ‘stricken in yeares’.¹¹⁵ The Dover debacle, coupled with criticisms from Wiseman of civilian surgeons, illustrates that civilian medics were used to supplement army practitioners to spread the workload in garrison towns, not, as Firth maintained, because the latter ‘were not remarkably skilful’.¹¹⁶ This is not to deny that parliament dispatched leading London medics when senior officers were sick or wounded, such as when Skippon was wounded at Naseby, though the importance of that victory prompted parliament to ensure that regimental medics had the resources to deliver exemplary care to all the wounded.¹¹⁷

IV

James Wheeler argued that prior to the Civil Wars, ‘while the English were abreast of many of the tactical and technological aspects of the continental Military Revolution, they had still failed to undertake the interrelated financial and administrative changes which were essential and integral long-term parts of that process’. It was not until the Civil Wars that these changes

¹¹¹ Firth, *Cromwell's army*, pp. 254–5.

¹¹² Not the same man who served in Essex's army, who was dead by Dec. 1646: TNA, SP 28/41/1 fo. 79 (receipt for surgery chest, 3 Dec. 1646).

¹¹³ Gruber von Arni, *Justice to the maimed soldier*, pp. 116–18.

¹¹⁴ Bodleian Library, Rawlinson MS, A, LX, fos. 323–6 (examination of Edward Cooke, 7 Aug. 1658).

¹¹⁵ Gruber von Arni, *Justice to the maimed soldier*, p. 117; TNA, SP 18/182 fo. 147 (petition from the sick and wounded in Dover, 2 Sept. 1658).

¹¹⁶ Wiseman, *Severall chirurgicall treatises*, p. 408; Firth, *Cromwell's army*, p. 255.

¹¹⁷ I. Pells, ‘“Stout Skippon hath a wound”: the medical treatment of parliament's infantry commander following the battle of Naseby’, in A. Hopper and D. Appleby, eds., *Battle-scarred: mortality, medical care and military welfare in the British Civil Wars* (Manchester, 2018).

were implemented.¹¹⁸ Wheeler's argument applies as much to frontline medical provision as to any other aspect of the Military Revolution. Many features of Civil War regimental medical provision had been trialled previously but it was not until that conflict (and through the implementation of the weekly assessments and the excise) that the continental military medical practices highlighted by Cook were implemented in Britain for any sustained period of time. If warfare drives medical advancement as the cliché suggests, then the experience of the Civil Wars is a reminder that progression is not based solely on the battlefield environment but also on the bureaucratic procedures that supported it. The raising of armies might provide many new opportunities for practitioners to improve their knowledge and treatment of military conditions, as well as develop new techniques in response to the challenges posed by the evolution of weaponry and engage in aspects of medicine beyond their strictly defined civilian roles (the practice of physic by surgeons, for example). However, such opportunities were more likely to have been taken up by practitioners if the promise of sufficient material compensation for their efforts was fulfilled.

That said, as Gavin Robinson maintained, during the Civil Wars resources were often contingent on political circumstances and the outcome of battles. Reliable tax revenues did not guarantee success and administrators had to work hard to make victory possible.¹¹⁹ Parliament had constructed sustainable tax systems to support its armies in a long war by mid-1643 but in autumn 1644, it took the humiliating surrender at Lostwithiel to jolt parliament into supplying their surgeons. The recognition that resources were contingent on political circumstances explains why the evolution of British military medicine was a process of ebbs and flows, rather than teleological development. What the Glorious Revolution resolved, as Wheeler again argued, was the difficulties in government finance which stemmed from the conflict of political philosophies between the Stuarts and their parliaments that had re-emerged to plague English military operations at the Restoration.¹²⁰ This political shift no doubt had as profound implications for the administration of military medicine as the rest of military administration. Yet if a revolution may build upon previous advances, and its impact may not be fully realized until later, but it occurs where a paradigm shift takes place that qualitatively reshapes subsequent affairs, then it is in the Civil Wars that we must place the revolution in British military medicine.¹²¹

By placing Civil War regimental medics in the context of what is known about seventeenth-century practitioners more generally, it seems that they differed little from their civilian colleagues, in terms of their education and training,

¹¹⁸ J. S. Wheeler, *The making of a world power* (Stroud, 1999), p. 16.

¹¹⁹ G. Robinson, *Horses, people and parliament in the English Civil War* (Abingdon, 2016), p. 3.

¹²⁰ Wheeler, *Making of a world power*, p. 20.

¹²¹ *Ibid.*, pp. 6–9.

whilst a medical career in the army was potentially a lucrative one. With this in mind, it is difficult to argue that the armies habitually enlisted substandard practitioners. No doubt some were more skilled than others but the wars provided an environment in which the innovative could flourish. Of the 580 parliamentarian wounded who received medical treatment in Northampton in the immediate aftermath of the battle of Naseby, only forty-six (7.93 per cent) were subsequently noted 'mortuus est'.¹²² Lack of comparable evidence from the beginning of the wars makes it difficult to determine how far the survivors had benefited from observation-based practice conducted over the years of sustained warfare but it does not seem unreasonable to suggest that this may have been the case. Moreover, as Rutherford pointed out, the numerous maimed soldiers who petitioned for financial relief from the state during the Civil War years had survived severe and often multiple injuries.¹²³ Some claimed relief as late as the 1700s, showing that they survived their injuries for decades afterwards.¹²⁴ Indeed, it is not known what happened to the soldier from the siege of Taunton with which this article opened but he was still alive a week later when Wiseman left him to move on with the rest of the army.¹²⁵

¹²² TNA, SP 28/173/1 fos. 1a–18a (payments to the sick and wounded that came into Northampton since 14 June 1645).

¹²³ Rutherford, 'Ground-breaking pioneers', p. 183.

¹²⁴ West Yorkshire Archive Service, QS1/45/3/6 (petition of William Walker, 1706), QS1/47/8/6 (petition of William Hilton, 1708), and QS1/48/3/6 (petition of John Genn, 1709).

¹²⁵ Wiseman, *Severall chirurgical treatises*, p. 403; Carlton, *Going to the wars*, p. 226.