‘Men whose vocation calls us to dangers substantial’

Health care in the early English East India Company, 1601–11

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Early modern seafaring was a dangerous occupation: with the uptick in long-distance oceanic travel during the Elizabethan era (1558–1603), there was a consequent increase in morbidity and mortality. Whether seamen were engaged in naval campaigns or merchant voyages, their health was at high risk by any form of maritime employment that kept them at sea for long periods of time: crews diminished by sickness and injuries struggled to accomplish the intended objectives of their voyages. Yet, as challenging and enduring as these problems were, there were ‘lessons learnt’ from this period of intense maritime activity. The English East India Company (EIC), a mercantile venture formed in 1600, was one of the chief beneficiaries of these lessons. The Company attempted to harness existing knowledge and improve upon it in order to achieve its commercial goals. Some historians have assumed that the high mortality rate on its ships was the result of the Company’s ‘legendarily meager’ treatment of its men. However, the Company knew its fortunes were dependent on having enough men to sail the lucrative cargoes home. As will be demonstrated, the EIC was a solicitous employer and laboured to develop effective and varied health care measures, although it struggled against an overwhelming foe.

The problems

The two to three year voyage to the East Indies and back was a gruelling one in terms of the physical and mental toll it took on the participants. Figures for the first voyage (1601–03) indicate the mortality rate in the small fleet was around 60 per cent. By the time Henry Middleton’s second fleet (1604–06) limped to the fledgling English factory in Bantam, Indonesia, there were only 50 of the roughly 500 men who
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were fit for purpose in the four ships and ‘those that came thither in health, many never went out (for England).’ Diminishing complements made the labour-intensive business of sailing a seventeenth-century ship extremely difficult, especially on the return voyage. The Company fretted about the cargo and ships for want of men to bring them home. On the second voyage, foreign sailors had to be hired to bolster numbers. The Company’s ship, Union, sank when her skeleton crew lost control of the vessel off the coast of Brittany in 1611 during the fourth voyage.

Sickness was widespread, especially on the outward leg of the voyage from England. It was not only the months at sea and poor diet that proved harmful to so many: the East Indies’ climate was taxing as well. Whether on land or at sea, Englishmen feared their European and Asian trade rivals would attack them. Those left at Bantam to establish an English presence were terrified their fledgling base would be set on fire by their adversaries, especially the Javans and the ‘damned Chyneses.’

Because mortality was around 50 per cent at Bantam, the Company had to create a long list of merchant factors who would in turn take charge in the event of the death of their superiors. In late 1604, merchant factor Edmund Scott wrote ‘Bantam is not a place to recover men that are sicke, but rather to kill men that come thither in health’.

Diseases

Even the most gifted English medical professionals and experienced seafarers were mystified by how to battle the punishing climate, foreign ailments, and vitamin deficiency. Although Dr James Lind’s analysis refers to the Seven Year’s War (1756–63), it holds true for the early modern period: ‘[T]he number of seamen in time of war who died by shipwreck, capture, famine, fire or sword are but inconsiderable in respect of such as are destroyed by the ship diseases and the usual maladies of intemperate climates’.

On the early EIC voyages, most shipboard deaths were from scurvy, flux (dysentery), or calenture (malaria, yellow fever). Scurvy, caused by a deficiency of vitamin C, was one of the greatest killers of early modern seafarers. Contemporaries did not understand the concept of a balanced diet but a few observant seafarers were making the connection between seamen’s customary diet (which was so dependent on salted provisions), long-distance voyages, and illness.

Sir Richard Hawkins was an innovator like his father, Elizabethan naval reformer, Sir John Hawkins. The younger Hawkins set down various recommendations in his Observations in 1593. Regarding scurvy, he commented that ‘divers men speake diversly’ about its causes. Sir Richard noted that the ‘seething of the meate in salt water, helpeth to cause this infirmitie, which in long Voyages can hardly be avoided’. He advised everything from physical exercise to ensuring the men and their vessel be cleaned regularly. Hawkins also advocated shunning salted provisions whenever possible, and recommended that men should be put ashore to refresh themselves: ‘for the sea is naturall for fishes, and the land for men. And the oftener a man can have his people to land, not hindering his voyage, the better it is’. Most remarkably, he claimed
'that which I have seene most fruitfull for this sicknesse, is sower oranges and lemons'. As we shall see, the leaders of EIC voyages would implement a number of proposals that echo those in Hawkins’ Observations.

**Accidents**

Although seamen were more likely to capitulate to disease, accidents were also common: ships were dangerous working environments. In the pages of the Company’s archived journals, there are accounts of men falling from heights, being swept overboard, and, in one case, being attacked by an alligator. On more than one voyage, men met their end by mishandling gunpowder or firearms. Storms were a perpetual threat: participants regularly recount terrifying encounters with the elements in which they credit ‘the miraculous worke of god’ for deliverance. Ships were routinely damaged and, in extreme cases, wrecked. The Company tried in vain to ascertain what became of its ship, the *Susan*, and her crew after they disappeared during the second voyage. The Company issued several directives to its employees going to the East Indies to inquire about their fate. During the third voyage, two EIC ships almost struck each other and there would not have been ‘a man lefte alive to lament our miserye nor reporte what had become of us’. Both the *Ascension* and the *Union* were lost in separate incidents during the disastrous fourth voyage. Human error could well have been the cause of the *Ascension*’s sinking. Ships were often lost on the homeward journey when sickness and mortality weakened and depleted crews. The Company’s journals detail a number of injuries and deaths due to accidents and shipboard conditions, as well as attacks from hostile Europeans and Asians: yet such problems only claimed a small percentage of the total number of men unable to perform their duties.

**The East India Company and healthcare**

Given that its workforce faced a multitude of health risks, the Company began forging what we might anachronistically call a ‘health and wellness programme’ from its first voyage. The medieval Laws of Oléron provided a basic ‘blueprint’ for English maritime health care: employers were to pay for the care of their sick and injured employees ashore. Although there is very little information, it is likely that females of very modest means were hired to care for them in their homes or in public houses, as was the case for thousands of naval seafarers later in the century. Doubtless, this posed logistical and financial difficulties for ship owners and masters. When they could not be put ashore, the diseased and wounded merchant mariners were tended on shipboard by their crewmates or by barber-surgeons, if a ship was privileged to have medical personnel aboard.

Evidence is sparse, but my previous research suggests that at least some of the merchant marine did follow this model. Although the Elizabethan naval fleets carried surgeons to provide care afloat, when campaigns concluded, the sick and injured were generally discharged to their sorry fate. A lucky few naval veterans received begging licences and in the closing years of the war, the Crown dispensed a small number of...
pensions. The maritime community, therefore, seems to have used the Laws of Oléron as a model: employers owed some form of medical care to their seafaring employees.

When impressment did not nullify their ability to choose their voyages, seamen used their customary employment freedom to make their own contracts. An important component of this was to assess risks versus remuneration: shipboard conditions and health concerns loomed large in this consideration. Seamen had a high threshold for peril, or as one EIC participant wrote, ‘wee beinge men whose vocation call[s] us to many dangers substantial’. 29 Even so, such men had limits. The EIC needed its employees in health and garnered the ‘best practices’ of the day in an attempt to do this. No doubt, this was a significant factor in recruiting men for this long, tedious, and dangerous journey. 30 The fact that a number of the skilled men who had the most lucrative career prospects were willing to sail on subsequent EIC voyages speaks volumes about how they regarded their treatment and conditions. 31

**Professional medical care on shipboard**

Whether in naval or mercantile fleets, it was increasingly likely ships carried one or more surgeons on large-scale undertakings. 32 Surgeons became more common on shipboard during the Elizabethan period, and by the early seventeenth century, it was said that seamen ‘will do nothing without a chirugeon, for that it puts them out of heart’ and ‘is a great discouragement to our men’. 33 Recognizing how much the devastating health problems had affected previous commercial missions, the Company employed surgeons from its first voyage (1601–03). 34

However well intentioned or trained these men were by the standards of their day, they were not up to the task of shipboard health care in tropical climates. Surgeons were most efficacious when it came to treating battle wounds and administering the external treatments for which they were trained. EIC crews did not shrink from a fight at sea or on land and they were very willing to subdue ‘prizes’ when the possibility presented itself. 35 Treating battle wounds, however, was only a very small part of caring for those ‘unfit for purpose’ on Company ships.

Despite the fact that the Company mandated that ‘Continuall & true Journalls be kept’ with an account of ‘everythings that passeth’, 36 there are few entries about how the shipboard surgeons plied their craft. However, incompetent surgeons did invite complaints. Reverend Richard Surfleet claimed to be both a physician and a chaplain and was hired to serve on the second voyage. Doubtless, the Company was attracted by the idea of paying one employee to fill two positions. When the men passed the Equator in May 1604, many fell sick of scurvy, bloody flux, and fever, ‘our phisition (Surfleet) shipt for that purpose being as unwilling as ignorant in any thing that might helpe them – a great oversight in the Company, and no doubt wilbe better lookt to hereafter’. 37 Conversely, able surgeons commanded respect and affection. In June 1608, for example, Master Surgeon Balstowe, an ‘honest and sufficient man’, died during the voyage, ‘to our great greiffe’. 38

EIC surgeons were often numbered among the casualties: 39 these landsmen were probably more vulnerable to the challenges of shipboard living and long-distance travel than the hardened seafarers were. Although there was no criticism about
surgeon Christopher Newchurch’s competence, his suicide attempt during the first voyage might have been linked to a period of high mortality in the fleet, and in his ship in particular. Whatever the source of his distress, Newchurch was removed from his post and served out the rest of the voyage as an ordinary seaman.

There were negative comments in the Company’s correspondence for 1614–15 about boys being thrust into the surgeon’s place: this is probably a result of so many ship’s surgeons expiring during the voyages, or in Newchurch’s case, being demoted, only to be replaced by their less experienced mates or young apprentices. There were also complaints about the contents of some of the surgeons’ medical chests – diverse drugs that had gone bad and unguents ‘made of kitchen stuff’. In an effort to remedy these problems, the Company appointed John Woodall, a military surgeon, as the first Surgeon-General of the EIC in 1613. Woodall designed the EIC’s regulations for its surgeons and dictated what should be included in their medical chests. The Company also commissioned him to write a treatise to assist its medical men: the first edition of *The Surgeon’s Mate* was published in 1617. Although the Company tried to aid its surgeons, the odds were stacked fatally against them.

The men seemed grateful for the surgeons’ attentions and they had considerably lower expectations of their health care providers than we do today. Well aware of the scope of the medical challenges, they put more faith in God than their surgeons. During the second voyage, Edmund Scott wrote that:

> after our men were a little recovered of the scurvie, the fluxe tooke them. So that we continued still verie weake in men; insomuch that it was unpossible, in mans judgement, that ever wee should bee able to accomplish our business in that manner as (God be thanked) it is; Who surely heard the prayers of some, both in England and also amongst us, and looking downe in mercie upon our weake-nesse, did raise us up againe.

### Nursing care

Because many maritime ventures did not hire a surgeon, seafarers were accustomed to managing shipboard medical treatment themselves. Whether or not there was a surgeon on the ship, crewmembers took care of the sick and injured. The articles of the Company of Merchant Adventurers (1553) stated plainly ‘the sicke, diseased, weake, and visited person within boord, to be tendred, relieved, comforted, and holpen in the time of his infirmitie, and every maner of person, without respect, to beare anothers burden’. As was the case with the English community on land, the practice of medicine went well beyond professional healers.

On land or shipboard, visiting and nursing the sick and dying was a social and religious duty; illness was very much a communal experience. One interesting difference between nursing care among the land and sea communities is that nursing was typically a female preserve ashore, and out of necessity, done by men in the all-male shipboard community. Presumably, seafarers must have done a reasonable job, as there were no complaints in the accounts of the early EIC voyages. In fact, dying men habitually made bequests in their shipboard wills to crewmates who had nursed
them. It is impossible to say if these bequests were made to repay a financial debt for care or if they were donations made out of gratitude. There are probably countless other recipients of bequests in wills who are not identified as caregivers by the testators. Twenty shillings (roughly a month’s wages for common seafarers) was a typical bequest, although testators gave clothes and other items as well.

In the cluster of 12 wills for the second voyage where testators identify shipmates who cared for them, all the named caregivers were different, with the exception of Robert Jackson who was given bequests by two crewmates. Francis Kindes of the Ascension gave all his goods to Robert Jackson, who he claimed was his friend, ‘inconsideration of the paines which he had taken with him in his sicknes’. Edward Chewne also gives Jackson all his possessions, ‘in consideracion of all the paynes […] taken with him in his sicknes’. If Jackson survived the voyage, he would have reaped a substantial financial reward from nursing Kindes and Chewne. If Jackson or other crewmates had been designated caregivers to tend all those who were indisposed, presumably their names would appear more frequently in shipboard wills. In this cluster of wills, only one dying man made a bequest to the ship’s surgeon. This is typical of seamen’s shipboard wills of the period: caregivers are named and given bequests far more often than ship’s surgeons. This is most likely a reflection of the fact that the nurses spent more time as the primary caregivers than surgeons did.

Diet

Seamen’s diet caused them no end of health problems. Before its departure from England, the first EIC fleet was furnished for almost two years with bread, beef, pork, fish, peas, beans, rice, cheese, butter, beer, cider, wine, and aquavitae, as well as honey, spices, oil, and vinegar. Noticeably absent from seafarers’ standard diet was fresh fruit and vegetables. The staples of the ‘maritime menu’ were salted meat and fish, biscuit, cheese, and beer. Although in this period there was no understanding of vitamins or the importance of a balanced diet, it was becoming clear that weeks and months of salted sea fare had a negative impact on seamen’s health. Stuart Captain Nathaniel Boteler wrote that ‘our much and indeed excessive feeding upon these salt meats at sea cannot but procure much unhealthiness and infection’. Without supplemental provisions of healthier, fresher food, the men developed scurvy and various vitamin deficiencies, usually one to two months into a voyage. As a result, the Company was making strides to procure a more nourishing diet for its employees. John Hearne and William Finch of the Red Dragon stated this connection explicitly during the third major voyage (1607–10) in their shared journal: fresh victuals are ‘the chief preservative of mens healths’. The Company cautioned the officers of that voyage ‘that a special care be had, to releeve the sicke wth such fresh meates & other Comfortable things, where with we haue furnished each ship for that purpose’. Although it was generally recognized in the maritime community that salted provisions were too hard for the sick to digest, the EIC was attempting to furnish all the men with a diet that was both restorative and would prevent illness.

The Company expected that the fleet would acquire victuals along the route, although provisioning could be a precarious business so far from home. General James
Lancaster traded with ‘the people of the country’ on the first voyage and officers were ordered to keep journals to note places where fresh food and water could be found or purchased. Subsequent commanders and officers followed suit. Surviving journals indicate the men enjoyed fresh fish of all sorts, goats, oxen, hens and fowls, mutton, rice, lemons, limes, oranges, watermelons, prunes, radishes, plantains, peaches, coconuts, and on at least one occasion, dolphin pie. They also recorded places where Company ships should avoid when provisioning. Finding sources of fresh water could be problematic: in 1603 Edmund Scott wrote of ‘bad dyat and drinking of that bad water’ made his group so ‘low with loosenes of body […] that we thought wee should all have died’.

By far the most important innovation in shipboard diet was the Company’s adoption of anti-scorbutics. James Lancaster survived a voyage to the East Indies in 1591 and anticipated that scurvy would claim many of his men on the EIC’s maiden voyage in 1601. The men on Lancaster’s ship were given ‘three spoonfuls [of lemon juice] every morning, fasting; not suffering them to eate anything after it till noone’. It was thought that the juice would be more effective if the men avoided salted meat: ‘By this meanes the general cured many of his men and preserved the rest’. Until Lancaster’s supply of lemon juice ran out, his crew remained healthy while many in the rest of the fleet suffered the ravages of vitamin C deficiency.

In December 1601, Lancaster sent men ashore at St Mary’s Island (off Madagascar) ‘where wee had some store of limons and oranges, which were precious for our diseased men, to purge their bodies of the scurvy’. Lancaster has been credited with using citrus fruit as a preventative measure and as a cure, and possibly conducting the first scurvy trials at sea. Lancaster did not discover the cure for scurvy: this veteran seaman adopted a beneficial treatment known to some experienced mariners, but not in widespread usage.

Lancaster established an extremely important precedent for succeeding voyages: thousands of limes and lemons were purchased, and administered in water to the men. When the fleet on the third voyage visited Sierra Leone, they juiced a hundred thousand lemons and limes during the five weeks they were there. Unfortunately, for generations of seafarers, the far less effective, but cheaper, West Indian lime was seen as an interchangeable alternative to the expensive Mediterranean lemon.

**Refreshing**

From its inception, the Company and its officers appreciated that men needed to spend time ashore. The leaders of each voyage were constantly on the lookout for places of ‘good refreshment’ to ‘rayse upp our sick men’. Lancaster’s men found that Table Bay offered ‘so royall refreshing’ that most of their men recovered their health. They were also impressed with Priaman which ‘is very wholesome and healthfull’.

There were, however, often divergences between the Company’s suggested itinerary and timelines and actualities in the fleet. For their part, seafarers had no problem exercising their agency ‘on site’ when those in authority attempted to push them beyond their considerable limits. With many ill with scurvy during the second voyage, some of the seamen ‘cried out most lamentably’ and ‘made a petition to the Generall
In both instances, the men persuaded their superiors to change their minds and put into port. The men had a clear sense of the value of their labour in relation to the Company’s commercial goals, as they articulated to Keeling.

By the third voyage, the men had developed expectations based on the precedent and practices of previous voyages: ‘and our men ever having expectation in this place to have refreshment’.78 This may explain one of the Company’s early directives, threatening to punish those men who impeded the progress of the voyage by straggling ashore looking for fresh fruit and other foodstuffs. The Company advised participants to ‘use a discreet means in eating of fruits, or fresh victuals’ lest the men ‘suffit & fall into diseases, whereof we have had too much experience’.79 Although seafarers were reputed to be wedded to their salty, weevil-infested sea rations,80 these men were gorging themselves on fresh food. It is difficult to know whether they were doing so because they found their regular rations so monotonous and rancid by this point in the journey, or if they appreciated how vital fresh provisions were to their health. Possibly both are true. As Hair and Alsop have pointed out, ‘we would be wrong to assume that – short of mutiny – Tudor sailors were merely placid recipients of whatever levels of dietary and health care their superiors chose to provide’.81 EIC seamen had formed a notion and articulated it to their leaders that they had a ‘right to refreshment’, which included fresh food. They were willing to petition and protest to ensure they were given their due because they appreciated the benefits to those already ill and to those trying to remain healthy.

There were many experienced seafarers in the ranks of the Company’s officers: they recognized the need for responsiveness in the face of protests over health concerns. However, in one instance, John Lufkin, master of the EIC pinnace Good Hope, failed to acquiesce to his crew’s repeated requests for provisions and refreshment in 1609.82 One of the men took a mallet and ‘strooke his braines out’, claiming to act for the collective: ‘it was better for one to dye then all’.83 This was a rare instance when a mutinous crew in Tudor-Stuart times crossed the line from verbal protest and work stoppage into murder, but it demonstrates how seriously the men took the practice of going ashore.84

There was a geographical basis to these disturbances: the men pressured their commanders to go ashore on three of the first four voyages as they were sailing around the southern tip of Africa. They complained about the prevalence of sickness and the need for fresh food. This remained a highly contested matter in the early decades of the EIC.85
Care ashore

There is not much information about what arrangements were made during this period for the sick and injured on any type of English voyage. Although many seem to have been taken care of on cramped ships, the ideal was to put the sick and injured ashore, as per the Laws of Oléron. The Company appears to have followed these practices whenever possible. There are several references to the sick lying ashore when the fleet was in the East Indies: ‘Our sicke and weake men in bothe shippes were sent ashore to those houses and meanes made ffit ffor them ffor recovering strength’. Houses were built for the sick ashore in 1608 and ‘Convenyent thinges settupp for them to lye upon’. The Company also recommended using old sails to make tents for the refreshing of sick men. The English, wary of being attacked by rivals, guarded their ill and injured: ‘our gennerall, beeinge carefull of the safetie of his sick and impotent men wch lay ashore’, and, on another occasion, ‘wee all returned aborde gevinge thancks unto God ffor the protection of our sick men ashoare, whome hee had so gratiously preserved ffrom the ffury of this heathenish nation’.

No doubt the ailing men were more comfortable ashore, whether in tents or houses, than in a cramped ship. Most importantly, once ashore it was easier for caregivers to procure fresh water and food. Time ashore invariably bolstered much of the workforce sufficiently to continue the voyage. EIC voyages had a decided pattern of illness weakening the crews, a period of ‘refreshing’ ashore that led to partial recovery of most of the company, and then recurrence of illness and malnutrition until the next period on land. Without time ashore, high morbidity and mortality ‘would enforce us to be so cast down, as that it might work the utter overthrow of the voyadge’.

On at least one occasion the EIC offered assistance for its sick men once they were back in England, although it is unclear how long they assumed that responsibility. In 1606, the Company ordered employees to Plymouth to tend to the men of the Red Dragon and Ascension after they returned from the East on the second voyage. EIC representatives were ordered ‘wthall expedicion to repaire to the said porte’ and to ‘doe your best endevour’ to provide for those who had arrived. They were to identify those who could not endure the passage to London because of sickness (presumably to arrange care ashore there) and to provide ‘all thinges wch shall be necessarie for the rest of the men’.

Toward a holistic health and wellness policy

In their efforts to conquer health problems that seemed to be insurmountable, the Company in London and the participants on the voyage groped in the dark for any solutions that might improve conditions and preserve their workforce. Their remedies were wide-ranging – everything from the state of the men’s souls to what went in their bellies: ‘Jacobean mariners understood the disease as a holistic malady with multiple palliatives’.

In addition to those measures discussed already, the Company tried various other ways to keep men in health. In the instructions for each voyage, crews were ordered
that ships should be kept ‘cleane & sweete, wch is a notable preservacion of health’. As mentioned in respect to scurvy, Richard Hawkins maintained that ‘the best prevention for this disease […] is to keepe cleane the Shippe’. By the third voyage, the Company looked to the Dutch, its trade rivals in the East Indies, as role models: ‘wherein the dutchmen doe farre exceede us in cleanliness to their greate Comendations & disgrace to our People’.

There was also a growing awareness of the importance of personal hygiene and keeping the men properly clothed. Contemporaries believed that seamen’s lack of clothing invited sickness. Richard Hawkins observed that it was ‘a common calamitie amongst the ordinary sort of Mariners, to spend their thrift on the shore, and to bring to Sea no more Cloaths then they haue backes’. Boteler complained, ‘these lads are generally known to make more of their bellies than their backs’. Walter Raleigh estimated that a suit of apparel would be worn to shreds within six months at sea – a fraction of the length of an EIC voyage. Richard Hawkins claimed that wearing scant, wet, and salt-encrusted clothing was bound to upset the humours. Both he and John Hawkins provided clothing for their men and by the early seventeenth century, merchant companies were more aware of such problems. The EIC followed suit, so to speak. On the third voyage, Keeling noticed that many of the men were ‘very slenderly cladd’ while they were enroute to ‘a kould clymate’:

having a regard unto their healths and to the welfare of ye voyadge, hee did proffer unto them to open a bale of broad cloth to make them clothes against they should come into the could, and that they should pay but the cost in England […] wch they did very thankfully accept.

During the third voyage, the Company’s considerable efforts to maintain morale and health included watching and performing drama, possibly William Shakespeare’s Hamlet and Richard II – in what would have been the first productions of these plays outside of Europe. Keeling believed these performances helped ‘keepe my people from idleness and unlawful games, or sleep’. Echoing Richard Hawkins’ advice that activity could ward off sickness, Keeling hoped such entertainments would be a tonic against scurvy.

There was also a vital ‘literary intervention’ on the third voyage: as the men were murmuring against continuing the journey, the General read from Richard Hakluyt’s work promoting English commercial expansion overseas. Keeling’s timely reading of Hakluyt’s The Principal Navigations convinced the men to press on to Sierra Leone. Many had been determined to go for home if ‘that Book had not given light’. This skilful intercession allegedly saved the Company £20,000.

In a religious age, it was natural that spirituality formed a critical component of the Company’s health and wellness programme. Religious observance was a standard part of most shipboard routines. The maritime community had a long tradition of lay worship because chaplains on lone vessels were a rarity – although they were more common as part of naval or merchant fleets. The Company appreciated from the outset that the voyage to the East was extremely taxing, and
religion could provide solace and unity. To this end, EIC fleets carried a preacher on board from the first voyage.

The Company believed that its success was linked to the men’s personal discipline and devotion to the Almighty. It was the Company’s ‘expresse order’ that ‘all opportunities (be) taken for thadmonishing of your people both to the service of God without wch noe enterprize cann be prosperous and to the Civill & orderlie carrying of themselves in the voyadge’. Religion was employed as means of social reformation and order. The Company’s directives included each ship’s company attending prayers in the morning and evening, as it thought religious worship was the principal means ‘wch draweth all Christains to conformitie and submission’ and so that ‘god whom yee serve shall the better blesse you in all yo[ur] affaires’.

There is not a great deal of detail in the records about the nature of the religious services. We know the men held Sunday services and sang Psalms at the changing of the watch. During an audience with the king of Achin in Sumatra, Lancaster and the men on the first voyage sang a Psalm, telling the king that they sang Psalms daily. There was a special emphasis on having services before the fleet departed on a major leg of their journey. For example, the men took communion and listened to a sermon before the first fleet departed for home and before the third fleet departed England.

Chaplains were very useful to dispense spiritual council and perform religious rituals that fostered unity during traumatic times. After he was condemned to die for sodomizing a ship’s boy during the fourth voyage, Nicholas White prepared himself for his execution ‘very dilligentlie all the daie and night’ with the help of the preacher. The chaplain delivered a sermon that called all aboard to a conversion of the heart, and sought to ready the condemned to leave this world. Before White’s hanging, the crew engaged in ‘prayer and godlie exhortacions’.

It is important to note that religious observances continued even after the death of the fleet’s clergyman or, in the case of the third voyage, when the preacher the Company hired failed to take up his post. Funerals were conducted with or without the chaplain. On the first voyage, a Jewish convert was christened after the chaplain’s death. It seems that officers acted as worship leaders, preachers, and godfathers. Their wills demonstrate that some of the men (probably literate officers) owned service and sermon books, Bibles, and religious tracts.

Religious belief probably ran the gamut from the fervent and orthodox to those who were observant because it was an ingrained part of their daily rituals at sea. Extant journals, letters, and last testaments reveal that many of these men were very attached to England’s form of Protestantism. Given that they were abroad for years and in intimate proximity to death, the Company required religious practices to provide solace and connection to home. In the words of one participant on the third voyage:

Whereas nowe yt is doubtefull whether we shall prooceede in our voyage, our men falling every day almost downe of the scurvy […] But god ys all sufficiente, whose I hope will in due time helpe us. And though he kill me, yet I hope still to trust in him.
Conclusion

The Company had many formidable foes that threatened its commercial success. One of the biggest threats to its profits was the remarkable diminution of its workforce during each voyage. Those in London and the officers on shipboard were committed to maximizing Company revenues, which was intimately tied to the men’s health.

The Company’s notion of how to battle sickness was very much a ‘work in progress’. The use of anti-scorbutics is an apt example. Lancaster borrowed from the ‘cutting-edge’ medicine of his day, doling out a few teaspoons of lemon juice to the men on his flagship during the first voyage. In subsequent voyages, the men juiced thousands of lemons and limes to ward off scurvy.115 The participants of each voyage were observing and experimenting to see where improvements could be made: ‘wee ffound by experience in gevinge them ffresh victuals when wee grew neer the equinoctial’ was ‘the chief preservative of mens healths’.116

Richmond Barbour writes that ‘terrible mortality’ on these voyages ‘compelled them to develop corporate protocols of writing, reading, and archiving’ because ‘Knowledge acquired at lethal cost to those who earned it required preservation’.117 Some of their directives were based on their own experiences in the East, but it is clear that the Company’s health care was rooted in the wisdom gathered during the Elizabethan maritime expansion. There is no concrete evidence that well-placed individuals in the Company read Richard Hawkins’ Observations (1593), but many of the EIC’s practices follow his recommendations. Whereas Hawkins advocated physical activity, time spent on land, and eating citrus fruit, EIC crews were put ashore to gather fresh food and for exercise: ‘we filled 8 biskett bags wth lymes, and having recreated our selves with walking […] retourned aborde’.118 Hawkins, and his father John Hawkins, an important influence on the development of the Elizabethan navy, also had much to say about the importance of clothing and cleanliness on board. The Company embraced these views as well. Given that the participants were familiar with Hakluyt’s The Principal Navigations, it is not a stretch to think some officers had read Hawkins’ text. It is probable the Company and its officers sought out relevant texts and expert opinions about preserving the workforce and Hawkins did have dealings with the Company.119

The Company went some way to fighting the multitude of health problems inherent in this type of journey. We certainly cannot say that the EIC overcame these challenges but it went to great lengths to do so.120 From examining the voyages of its first decade, it is evident that the Company put a premium on not only following – but if possible, surpassing – the guidelines of the Laws of Oléron and the traditional obligations and approaches to maritime health care. Its flexible and fluid policies allowed enough men to survive – on most voyages – to sail the lucrative cargoes home.121

In terms of health care, seamen must have rated the EIC’s measures favourably or the Company would have struggled to hire men for each voyage. On the contrary, the skilled officers (who are easier to track in the records because of their prominence) frequently sailed again after surviving the gruelling journey.122 Such men were the elite of the maritime community and would have had various employment opportunities, and yet they took part in later EIC voyages.
The regular members of the crew repeatedly demonstrate their agency: no issue touched them as closely as their health. The men had certain expectations that they zealously guarded, such as being put ashore for refreshment. This precedent was established on the first voyage and different crews petitioned their superiors to be put ashore during the next three voyages. Seamen knew that they were necessary cogs in the EIC commercial machinery and they did not shy away from pointing this out when it advanced their cause. Their officers were receptive to their pleas about their health – with the notable exception of the doomed master of the *Good Hope*.

Although few have voices in the official records, seamen must have considered their health care to be suitable, and that remuneration was commensurate with the nature of the voyage. The Company tried to keep them fit and care for them when they fell ill or were injured. When we do have a rare opportunity to ‘hear’ from the men themselves about their care, they were fulsome in their praise. In his will of 1604, Evan Riggby, who sailed on the *Red Dragon* on the second voyage, requested ‘my wife and sonn to pray with me for the Generall the Mr and Captayne Davie Middleton for by there means I have not wanted for any thinge that might recouer my healthe’.123 One of the participants of the third voyage lauded

> Our General [Keeling] whose care and wisdom in these Longe and tedious passage hath bene great, and I maye bouldly saye, that no men in England in his place and charge could performed it better then he hath don, both for the spedinge of the voyage, and care of his men.124

Even with its efforts to care for its men, the challenges remained daunting and voyages continued to take a severe toll on personnel. In 1615, one critic attacked the Company for its loss of lives and vessels, claiming their ships were like ‘coffins full of live bodies’.125 However, we should not assume that this meant that the Company was negligent in its care of its men. The Company and its participants did seek cutting-edge and wide-ranging solutions within the scope of early modern health care. While acknowledging the horrific human costs of English commercial expansion, we must consider seriously the claim that the EIC used ‘all that the wit of man, helpt by continuall experience […] to keepe them in good health, besides good Preachers, and the best Commanders’.126

**Notes**

2. I am indebted to the Institute of Historical Research for its support of portions of this research during my time as Visiting Fellow (2014–15).


6 B/2/84.


11 BL, B/2/1v.


13 C. Lloyd (ed.), *The Health of Seamen*, London: Navy Records Society, 1965, p. 3. To provide perspective on Lind’s comments, 133,708 men died from disease and desertion in the Seven Years War, compared to 1,512 killed in action.


15 R. Hawkins, *Observations of Sir Richard Hawkins*, J. A. Williamson (ed.) London, 1622, reprint 1933, pp. 40–2. Hawkins was one of the first Englishmen to write about the cure for scurvy but others discovered citrus fruit as an anti-scorbutic beforehand. The earliest reference to oranges on-board an English vessel can be found in a seaman’s will from 1566. Hair, ‘“Full Fathom Five”: Deaths of Elizabethan Seamen’, unpublished paper, p. 47. In 1582, a crew sailing to Sierra Leone rinsed their mouths with lemon juice to ward off scurvy. There are earlier references to other European seafarers using anti-scorbutics. Vasco da Gama’s men ate citrus fruit to relieve their scurvy on a voyage to Asia in 1497; Jacques Cartier’s men were cured of their scurvy by a native remedy of coniferous needles and bark in 1536 in Canada. The Dutch East India Company was using lemon juice, horseradish, and scurvy grass in the late sixteenth century. Hawkins might have acquired this knowledge as a prisoner-of-war in Spain. It is possible Lancaster learned of Hawkins’ recommendations through Sir Hugh Platt. J. H. Baron, ‘Scurvy Before and After James Lind: A Reassessment’, *Nutrition Reviews* 67/6, 2009, p. 316.


17 ‘A True and Large Discourse of the Voyage of the Whole Fleete of Ships Forth the 20 April 1601 by the Governours and Assitants of the East Indian Marchants in London to the East Indies; Wherein is Set Downe the Order and Manner of Their Traffickke, the Description of the Countries, the Nature of the People and Their Language, and the Names of all the Dead in the Voyage’, in W. Foster (ed.), *The Voyages of Sir James Lancaster*, Cambridge: Hakluyt Society, 1941, p. 125; Barbour, *The Third Voyage Journal*, pp. 13, 18, 128, 156, 200; ‘The First Voyage Made to East-India by James Lancaster (now Knight) for the Merchants of London, anno 1600 [i.e. 1601], with Foure Talle Shippes, to wit, the Dragon, the Hector, the Ascension, and Susan a Victualler called the Guest’, in


19 BL, E/3/1 f. 10.

20 Foster, *The Voyage of Sir Henry Middleton*, xxx; after the second voyage, officers on subsequent voyages were to ‘make diligent inquiry’ about the *Susan* or if any English ship had been cast away over the previous years. The Company hoped to recover survivors and remaining goods. BL, B/2/52v.


24 TNA HCA, 50/1/6, 50/1/192–3.


30 TNA, PRO PROB 11/107/266v.


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36 BL, B/2/46.


38 BL, Cotton Ms Titus, 278v.


43 The Governors of the EIC commissioned this work and agreed to defray the costs for the textbook, which was published under the auspices of the EIC. Woodall published a number of related works such as *The Pathway to the Surgeon’s Chest*. The edition of *The Surgeon’s Mate* published in 1639 contained various additions. D. Power, ‘The Surgeons Mate by John Woodall’, *The British Journal of Surgery* 61, 1928, p. 1.

44 Scott, ‘An Exact Discourse’, p. 149.


49 TNA, PRO PROB 11/102/109v.


52 TNA, PROB 11/108/116.

53 LMA, 9171/20/174.

54 TNA, PROB 11/108/224.


60 BL, B/2/46.


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63 BL, B/2/21v.
64 Scott, ‘An Exact Discourse’, p. 92.
65 ‘The First Voyage Made to East-India’, p. 79.
67 Keevil, Medicine and the Navy, p. 112.
68 Keevil, Medicine and the Navy, pp. 111–12.
69 The commission of Henry Middleton, General of the second voyage, issued by the Company urged him to follow Lancaster’s example from the first voyage. BL, B/2/20–26.
70 Barbour, The Third Voyage Journals, p. 15.
71 Lamb, Scurvy, p. 38.
74 ‘The First Voyage Made to East-India’, p. 81. Saldania is now Table Bay, South Africa.
75 Pariaman, West Sumatra, Indonesia.
76 ‘The First Voyage Made to East-India’, p. 113; Foster, The Voyage of Sir Henry Middleton, p. 9.
77 Barbour, ‘Red Dragon Journal’, p. 188. See also BL, Sloane Ms, 858/5.
79 BL, B/2/46.
80 Captain Nathanial Boteler wrote ‘the difficulty consisteth in that the common seamen […] are so besotted on their Beef and Pork as they had rather adventure on all the Calentures and Scorbots in the world than to be weaned from their Customary Diet’. Perrin, Boteler’s Dialogues, p. 65.
81 Hair and Alsop, English Seamen and Traders, p. 137.
82 It is not clear when the mutiny/murder took place but the trial occurred in May 1609. BL, Sloane Ms, 858, 20v–21; Foster, The Journal of John Jourdain, 1, pp. 78–80.
83 BL, Cotton Ms Titus, BVIII/36 and Sloane 858/30v.
84 BL, Cotton Ms Titus, BVIII/36 and Sloane 858/30v.
87 Foster, Letters Rec’d, II, p. 184.
90 BL, Egerton Ms, 2100/21.
91 BL, B/2/33v.
93 Hawkins, Observations, p. 41.
94 BL, B/2/46.
95 Hawkins, Observations, p. 41.
96 Perrin, Boteler’s Dialogues, p. 36.
100 These performances are a topic of considerable scholarly interest. For discussion, see R. Barbour and B. Klein, ‘Drama at Sea: A New Look at Shakespeare on the Dragon, 1607–08’, in C. Jowitt and D. McInnis (eds), Travel and Drama in Early Modern England: The Journeying Play, Cambridge: Cambridge University Press, 2018, pp. 150–68.
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105 Foster claimed that hiring a chaplain was an ‘innovation in the staffing’ on the second voyage but there was a clergyman, Reverend Pulley, on the first voyage. Foster (ed.), *Middleton*, xvii; Fury, ‘The First East India Company Voyage’, p. 85.

106 BL, B/2/21v–22.
107 *The Register of Letters*, p. 36; BL, B/2/20v, B/2/36, B/2/91, B/2/107.
108 *A True and Large Discourse*, p. 112.
109 BL, Sloane Ms, 858/21.
110 BL, Sloane Ms, 858/13, 858/21. Similar rituals are found occasionally in other sources. G. Callender, ‘Drake and his Detractors’, p. 72. TNA, HCA 13/30/108v; *The Voyage of Thomas Best*, p. 127; Fury, *Tides*, p. 57.
116 ‘Red Dragon Journal’, p. 166. Sickness often broke out around the time the fleets crossed the Equator. See also Foster, *The Voyage of Sir Henry Middleton*, p. 9.
119 BL, B/5/168, B/6/31–32.
120 Its responsive nature was in stark contrast to the Elizabethan navy, which had acute labour problems. See Fury, *Tides*, pp. 137–95.
121 Even disastrous voyages such as the fourth voyage could yield a profit. Foster, *The Journal of John Jourdain*, n. 1, p. xxi.
123 LMA, 9171/20/179.

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