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A History of Port Health in Southampton, 1872 to 1919

By

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ABSTRACT

FACULTY OF LAW, ARTS AND SOCIAL SCIENCES
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The arrival of any vessel at a British port in the nineteenth century presented the risk of spreading infectious disease to local residents and potentially resulted in epidemics. The main components of port health were quarantine, which detained vessels, and the work of Port Sanitary Authorities, which isolated patients. Previous work in this area has focused on London or provided national generalisations excluding the inconsistent approaches and local measures adopted to prevent the spread of infectious diseases including yellow fever, plague, cholera and smallpox. This research has answered two main questions about the development of nineteenth-century port health: why Port Sanitary Authorities were introduced in 1872 and why quarantine was abolished in 1896. It explores port health from a local perspective using the Port of Southampton as a case study. It examines how the authority was organised, the local measures it introduced and how it worked with other authorities in Southampton and the local region, such as Winchester, to prevent the spread of disease. A final section explores in detail Southampton's role as a trooping port, considering their impact on port health measures and the arrival of infectious diseases, such as influenza in 1918. This work bridges the gap between medical and maritime history of port health whilst demonstrating that the development of these health policies and practices were strongly influenced by politics both nationally and internationally.

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Declaration of Authorship

I, KATRINA TOWNER declare that the thesis entitled A HISTORY OF PORT HEALTH IN SOUTHAMPTON, 1872 TO 1919 and the work presented in the thesis are both my own, and have been generated by me as the result of my own original research.

I confirm that:

- this work was done wholly or mainly while in candidature for a research degree at this University;
- where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
- where I have consulted the published work of others, this is always clearly attributed;
- where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
- I have acknowledged all main sources of help;
- where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
- parts of this work have been published as:

Katrina Towner, 'Medicine and Politics: The Abolition of English Quarantine, 1872-1896' *International Journal of Maritime History* June 2007 pp. 211 - 224

Signed: .....

Date:.....

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Abbreviations

HRO	Hampshire Records Office
ISC	International Sanitary Conferences
LGB	Local Government Board
MOH	Medical Officer of Health
P&O	Peninsular and Oriental Steam Navigation Company
PMO	Port Medical Officer
PSA	Port Sanitary Authority
RSC	Royal Sanitary Commission
SARS	Severe Acute Respiratory Syndrome
SCA	Southampton City Archives
TNA	The National Archives
VAD	Voluntary Aid Detachment
WHO	World Health Organisation

Chapter 1: Introduction

As an island nation the sea has played an important role in Britain's development economically, politically and socially. Ports developed as trading posts and gateways, not only facing out towards the Empire but also facing inwards for returning passengers, troops, immigrants and seafarers. In the nineteenth century ports were the main point of arrival for these people. Just as British explorers introduced new diseases to foreign lands, so people arriving at British ports brought with them not only their luggage but also their diseases.

The British Government's concern about the health of the public grew during the nineteenth century and they acknowledged that it was important to prevent the spread of disease from ship to shore. The development of public health in the nineteenth century has been examined from a number of historical perspectives, including demographic, environmental, social, political and epidemiological. This is not unexpected because, since the second half of the eighteenth century, when there was 'a marked concern for the health of the people – a public health movement of sorts', there have been significant advances in politics, society and, importantly, in medical practice and theory.[1] As Sheard and Power have observed, the rapid development of public health during the nineteenth century was coupled with 'the most dramatic changes in urban life', including the population of London passing 'the million mark'.[2] Alongside urban developments medical ideas evolved, including concepts about contagion and the eventual acceptance of 'germ theory'. As Berridge has noted, this period of change has become a focus of many public health histories, with works including those by Rosen (1958), Wohl (1981), Hardy (1993), D. Porter (1994) and Baldwin (1999) to name a few.[3]

Over the twentieth century different events have sparked interest in public health and seen historians approach the subject from different viewpoints. Public health history written in the 1950s is considered to have taken a 'heroic' approach, for example with

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[1] Hamlin, C., 'State Medicine in Great Britain', in *The History of Public Health and the Modern State*, ed. by Porter, D. (Amsterdam Atlanta: Rodopi, 1994) pp. 132 - 164

[2] Sheard, S. and Power, H., eds., *Body and City: Histories of Urban Public Health*(Aldershot: Ashgate, 2000) p.4

[3] Berridge, V., 'History in Public Health: a New Development for History?' *Hygiea internationalis: An Interdisciplinary Journal for the History of Public Health*, vol. 1 (1999), 23-36, p.29. Wohl, A., *Endangered Lives: Public Health in Victorian Britain* (London: Melthuen, 1984) p.3, Fraser, D., *The Evolution of the British Welfare State: A history of social policy since the industrial revolution*, 2nd, 1984 edn (London: MacMillan, 1973); Rosen, G., *A History of Public Health* (New York: MD Publications, 1958); Porter, D., ed., *The History of Public Health and the Modern State*, 1st edn (Amsterdam Atlanta: Rodopi, 1994); Hardy, A., *The Epidemic Streets, Infectious Disease and the Rise of Preventive Medicine, 1856 - 1900* (Oxford: Claredon Press, 1993); and Baldwin, P., *Contagion and the State in Europe, 1830 - 1930* (Cambridge: Cambridge University Press, 1999)

Rosen arguing that public health was a 'triumph of knowledge over ignorance'.[4] Berridge has since commented that 'historians have grown more sceptical of heroic narratives of sanitary progress'.[5]

In 1976, McKeown's important yet controversial work *The Modern Rise in Population* stimulated much debate on the role of nutrition and other factors in European mortality decline, focusing on English and Welsh demographic data.[6] Gorsky has noted that McKeown's thesis triggered 'a fierce debate [...] about the relative importance of preventive medicine in the decline in British mortality'.[7] Over thirty years later, McKeown is still stimulating interest; for example Harris's article revisits the McKeown thesis.[8]

In line with the wider development of social history, by the 1980s 'the scope of public health history expanded [...] to include social relations of ideas and actions taken collectively and individually in response to epidemic disasters'.[9] The emergence of AIDS 'stimulated another revival' in research on the history of public health.[10] It could be argued that the recent outbreaks of SARS, Avian Influenza (also referred to as Bird Flu) and the trends towards global histories have further stimulated interest in the history of public health internationally, for both historians and medical professionals. Writing in the *Journal of Epidemiology and Community Health*, Berridge notes the importance of bringing 'historical perspectives to bear on current issues, to open up new perspectives on events in the past and thereby to suggest possible avenues for the future'.[11] She argues that for current medical thinking, historical research not only 'offer[s] challenges to dearly held beliefs, but [it can] also act as a springboard for further debate'.[12] From a purely historical perspective, Richard Evans states that 'by examining responses to disease in the past we can perhaps prepare ourselves for uncertainties of the future'.[13]

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[4] Porter, D., 'The History of Public Health: Current Themes and Approaches', *Hygiea internationalis: An Interdisciplianry Journal for the History of Public Health*, vol. 1 (1999), 9-21, p.2

[5] Berridge, V., 'Public Health Activism: Lessons from History?' *British Medical Journal*, vol. 335 (2007), 1310, p.131

[6] McKeown, T., *The Modern Rise of Population* (London: Arnold, 1976)

[7] Gorsky, M., 'Local Leadership in Public Health: The Role of the Medical Officer of Health in Britain, 1872-1974', *Journal of Epidemiology and Community Health*, vol. 61 (2007), 468-472, p.469

[8] Harris, B., 'Public Health, Nutrition, and the Decline of Mortality: The McKeown Thesis Revisited', *Social History of Medicine*, vol. 17 (2004), 379-407

[9] Porter, 'Themes and Approaches' p.10. See Crosby, A. F., *Ecological Imperialism: Biological Expansion of Europe 900 - 1900* (Cambridge: Cambridge University Press, 1991) and McNeill, W. H., *Plagues and Peoples* (London: Penguin, 1976)

[10] Berridge, 'History in Public Health: a New Development for History?' p.28

[11] Berridge, V., 'Making Public Health History Usable: The Launch of a new series in JECH', *Journal of Epidemiology and Community Health*, vol. 61 (2007), 90-91 p.90

[12] Ibid. p.90

[13] Evans, R., J., 'Book Review: Peter Baldwin Contagion and the State in Europe, 1830 - 1930, Cambridge, Cambridge University Press, 1999', *European History Quarterly*, vol. 31, 447 - 454

With such a vast amount of research focusing on the history of British public health and the importance of Britain's maritime heritage, it is surprising how little attention has been given to the importance of ports in the development of Britain's disease prevention methods. Ports played a vital role as gateways for controlling diseases entering the country, especially as British ports are, as Maglen states, 'the first line of defence'.[14]

A small number of articles have examined some aspects of British ports' involvement in disease prevention. These mainly focus on quarantine, with a few discussing the roles of the Port Sanitary Authorities (PSAs) and their staff. This work will build on the limited research that precedes it and will address some of the larger questions that have not been answered. Before identifying the themes and questions investigated in this work, the terms public health and port health are defined to ensure consistency of terminology and a clearer interpretation for the reader.

1.1 Definitions

1.1.1 What is public health?

The idea of what public health means has been a matter of constant debate. It is most commonly used to describe the health of the public. However, Hamlin has pointed out that it is an odd term since the health of individuals, a private matter, is considered public. He suggests that public health could mean one of three things:

> The actual state of the public's health, measured in mortality rates, filth in the streets and so forth; or the institutions of public health, or finally some ideal public health in whose name they condemn or congratulate the past.[15]

Other definitions of public health have included: 'the science and art of preventing disease' (the WHO); and 'the basic institution created and maintained by society to do something about the death rate and the sanitary conditions and many other matters relating to life and death' (Scheele).[16] Brockington has concluded that public health is 'a science and art capable of adaptation to the physical and social demands of any country anywhere in the world'.[17] These few descriptions show that the boundaries

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[14] Maglen, K., 'The First Line of Defence: British Quarantine and the Port Sanitary Authorities in the Nineteenth century', *Social History of Medicine*, vol. XV (2002), 413 - 428

[15] Hamlin, C., *Public Health and Social Justice in the Age of Chadwick: Britain, 1800-1854* (Cambridge: Cambridge University Press, 1998) pp.1-2

[16] WHO Expert Committee on Public Health Administration, adapting Winslow's 1923 definition, cited in Brockington, C. F., *World Health*, 2nd edn (London: J. & A. Churchill Ltd, 1967) p.5. Scheele, L. A., 'Public Health, 1852 - 1952', *Journal of the Mount Sinai Hospital.* (1953), 764-789 cited in Brockington p.5

[17] Brockington p.6

of public health can and have been drawn in various ways. The use of the term 'public health' in this thesis refers to institutions of public health. These include urban and rural sanitary authorities and the work of Medical Officers of Health (MOHs) in relation to the sanitary legislation (such as the Public Health Acts (1848, 1872, 1875, 1896) and the Sanitary Act, 1866).

1.1.2 What is port health?

The few histories that have examined port health have often neglected to define the term. It most commonly refers to the prophylactic measures put in place at ports to prevent the spread of disease. In general, this comprised the practice of quarantine until 1896, together with the work of the PSAs after 1872.

As with public health, port health has different meanings to different people. Port health can be seen as the health of the port or dock as a working area; the health of the port as a city or town; or health on board ships within the jurisdiction of the port. In this thesis, port health, in a similar vein to public health, refers to the work of quarantine officials up to its abolition (1896) and of the PSAs (from 1872). It is not possible to refer to a specific authority or a specific location because, as is shown in this thesis, the boundaries of port health were fluid. Indeed, this fluidity may account for the lack of definitions provided in previous literature and means port health should be considered as an aspect of public health.

As with the broad concept of port health, the idea of quarantine is usually equally ambiguous. In its broadest sense quarantine is the isolation of the sick. However, quarantine is not simply isolation. Musto has noted that 'quarantine is far more than mere "marking off or creation of a boundary to ward off a feared biological contaminant lest it penetrate a healthy population"'.[18] Musto believes 'one cannot limit the consideration of quarantine to the control of contagious diseases without minimising and underestimating the "deeper emotional and broader aggressive character" of any policy that dictates separation'.[19] Markel has noted that one of the earliest references to the concept of quarantine is in the Old Testament with the isolation of lepers.[20] Henry's commentary suggests that quarantine was used not to prevent the spread of leprosy or plague, but to

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[18] D. Musto, cited in Markel, H., *Quarantine! East European Jewish Immigrants and the New York City Epidemics of 1892* (Baltimore: The John Hopkins Press, 1997) p.4. See also Musto, D., 'Quarantine and the Problem of AIDS', *The Millbank Quarterly*, vol. 64 (1986), 97 - 117

[19] D. Musto, cited in Markel p.4. See also Musto

[20] Markel p.198 and footnote 6 in Chapter 1 'Concept of Quarantine'

prevent the spread of 'uncleanliness'.[21] Henry believed that isolation 'put a full stop to his [the leper's] business in the world, cut him off from conversation with his friends and relatives, [and] condemned him to banishment, till he was cleansed', supporting Musto's idea that as a concept isolation had social implications.[22]

Although focusing on the practice of quarantine as a port prophylactic measure, this thesis also considers briefly the impact of quarantine socially and economically. In the nineteenth century quarantine as a practice was continually changing. Pelling has noted that historians' confusion in reference to nineteenth-century contagion terminology is often a reflection of contemporary confusion.[23] This similarly applies when defining quarantine. As a concept and practice it developed over the nineteenth century to include a variety of more public health focused measures, such as disinfection. As this thesis explores the history of quarantine, it in turn examines the changing meaning of quarantine.

1.2 Local, national, and global perspectives

Although a micro study of port health, national and global factors influenced how port health in England and Wales was practised. The limitations and scope of this research are established by setting the geographical parameters, justifying the local study on port health and establishing the methodological viewpoint taken to explore the main themes of this thesis.

1.2.1 Local: The need for local port health studies

In his history of quarantine, McDonald acknowledges that '"looking to local rather than central organization" revolutionised our defence against [...] disease'.[24] It is surprising that his work does not focus on one vital factor – local authorities. Not only McDonald has done this; historical research on public health and, in particular, port health has tended to look at the national picture. Porter recognises that Welshman's publication *Municipal Medicine* uses 'the local study to explore much broader changes taking place in public health and medical service organization', making it one of the most

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[21] Eadie, J., ed., *The National Family Bible, with Commentary by Henry and Scott* commentary by Mathew Henry

[22] Ibid. with commentary by Mathew Henry

[23] Pelling, M., *Cholera, Fever and English Medicine, 1825 - 1865* (Oxford: Oxford University Press, 1978) p.302 – 303 and Pelling, M., 'The Reality of Anti-Contagionism', *Bulletin of the Society for the Social History of Medicine*, vol. XVII (1976), 5-7 p.6

[24] McDonald, J. C., 'The History of Quarantine in Britain in the Nineteenth Century', *Bulletin of the History of Medicine*, vol. XXV (1951), 22-44 p.38

comprehensive studies of twentieth-century public health.[25] Along with Sheard and Power's work, Welshman 'point[s] to a wide range of locations of public health history [...] waiting to be further explored'.[26]

Williams and Galley, and Woods and Hinde have demonstrated the importance of geography in demographic and health studies.[27] Concerning other health related issues, such as infant mortality, they have shown the disadvantage of 'traditional' histories that focus on national patterns and practices.[28] They argue that often 'the picture is much more complex than [...] traditional account[s] suggest'.[29] This is supported by the range of local public health histories focusing on large British cities, as well as many smaller towns and villages, identifying important differences when compared to national trends.[30]

Many studies on port health, such as those by Maglen, McDonald and Mullet, have focused either on the nation as a whole or on the port of London.[31] Examples from ports around Britain have been used to support their arguments, but none has examined individual ports in depth. Lawton and Lee state that 'port-cities shared a number of common characteristics including an inflated risk of epidemic infection and persistently high birth rates'.[32] However, the variations between ports, whether they were naval bases or ports receiving chemicals, troops or passengers, influenced how port health was practised. These differences have not been explored because of a focus on London and national policies.

Although London was, and still is, an important port, its port health practices varied compared to other ports for a variety of reasons. Firstly, demographic studies have shown that a capital city is never representative of other cities. Woods and Hinde state that there are 'inherent problems associated with treating England and Wales as one unit'.[33] Furthermore, London, along with Liverpool, had a dedicated Port Medical

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[25] Porter, D., 'Book Review: John Welshman, *Municipal Medicine: Public Health in Twentieth-Century Britain* (2000); Sally Sheard and Helen Power, *Body and City: Histories of Urban Public Health* (2000).' *Bulletin of the History of Medicine*, vol. 77 (2003), 732 - 735, p.732. See also Welshman, J., *Municipal Medicine: Public health in Twentieth Century Britain*, 1st edn (Oxford: Peter Lang, 2000)

[26] Porter, 'Book Review: Welshman' p.735

[27] Williams, N. and Galley, C., 'Urban-rural differentials in Infant Mortality in Victorian England', *Population Studies*, vol. 49 (1995), 401-420 and Woods, R. and Hinde, A., 'Mortality in Victorian England: Models and Patterns', *Journal of Interdisciplinary History*, vol. 18 (1987), 27-54

[28] Williams, H. C. M., *Public Health in a Seaport Town* (Shirley: Shirley Press, 1962) p.401

[29] Ibid. p.401

[30] See for example Brayshay, M. and Pointon, V., 'Local Politics and Public Health in mid-nineteenth century Plymouth', *Medical History*, vol. 27 (1983), 162 -178, and Toft, J., 'Public Health in Leeds in the nineteenth century', (unpublished doctoral thesis, University of Manchester, 1966)

[31] Maglen , McDonald , and Baldwin

[32] Lawton, R. and Lee, R., eds., *Population and Society in Western European Port Cities, c. 1650 - 1939*(Liverpool: Liverpool University Press, 2002) p.xvii

[33] Woods and Hinde p.41

Officer (PMO) and a separate MOH for the city. In all other ports, including Southampton, a majority of the time the MOH for the town was also responsible for conducting the duties of the PMO. The complexities of the history of port health could be missed if studies only focus on London or are too general.

It should be noted here that as well as being referred to as the Port Medical Officer some original sources refer to the same role as the Port Medical Officer of Health. This is confused further by many ports employing the same person to undertake the two roles. In this thesis, the Medical Officer of Health or MOH refers to the officer responsible for the borough, whilst Port Medical Officer or PMO refers to the officer responsible for the port. To prevent further confusion the name of the officer at the time will be used rather than just the title.

This research focuses on the work of PMOs in their capacity to inspect people rather than goods. The authorities that the PMOs worked for were also responsible for the inspection of vessels with regard to cleanliness and rats, and as the twentieth century progressed they became responsible for the standard of imported food and preventing the importation of some exotic animals, for example parrots after 1930. This thesis only examines the PSAs and the work of the PMO in relation to human disease prevention; the other aspects of their work have only received limited attention. Although focusing on the methods used to prevent the spread of infectious diseases, the history of port health and venereal diseases is not developed here. There is already an abundance of work available, especially on the relationship between venereal diseases and seafarers. This is not to say there is not scope for further work in this area in relation to Southampton.

As well as the role of the PMO other factors could result in variations in port health. These influences include different floating populations, for example, liner passengers, troops, ships' crews, immigrants as well as dockyard and port workers. These populations are yet to be examined in detail in relation to port health. Chapter five begins to resolve this by looking at the impact of troops on port health practices in Southampton.

It is important to study other ports such as Southampton because, as Palmer has noted:

> In the mid-nineteenth century London and Liverpool were the giants among English ports, in 1841 together accounting for 58 per cent of all inward shipping, while Glasgow handled 39 per cent of Scotland's import tonnage. These centres were

> distinct from all others not only in the quantity of cargo handled but also in its range and variety.[34]

More importantly, she observes that

> It is important to be aware that these [...] generalised impressions [...] have to some extent distorted the picture of what it meant to be a port town or city. Thus we have more awareness of the conditions of the port labourers than the characteristics of port elites; the pervasive orderliness of Southampton is less familiar than the squalor of Wapping.[35]

Local studies on port health help to build a wider picture of port health, similar to previous local public health histories. This work will also help to prevent an overload of traditional histories that focus on the national context. Nevertheless, it is important to keep in mind the national policies to understand more fully the local differences. In his work on the public health relations between Whitehall and the Liverpool town hall, Kearns emphasises the need to look at local practices.[36] Sheard and Power support Kearns stating that 'studies of urban public health must acknowledge the distinctive political cultures both of Whitehall and of individual town halls'.[37] Local studies of public health, including port health practices, can help to build a better knowledge of the two political cultures. Kearns emphasises the importance of this, arguing that 'local officers such as [Dr William Henry] Duncan [(MOH for Liverpool)] had their own agenda too'.[38]

The importance of understanding the relationship between national and local is also highlighted by Brand who argues there was a 'lack of communication between central and local health authorities, [and a] failure to enforce both permissive and mandatory nuisance statutes'.[39] Dr Richard Thorne Thorne (1841-1899), Chief Medical Officer of Health 1892 to 1899, stated port health measures would work

> so long as government tell their peoples that a line shall be drawn around them across which disease shall not pass, so long will those peoples be reluctant to spend their money on the promotion of true measures of prevention.[40]

It is surprising then that this has not been developed further in contemporary historical research. The national and local differences in port health policies and practices are a recurring theme in this thesis.

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[34] Palmer, S., 'Ports', in *The Cambridge Urban History of Britain: Volume III 1840-1950*, ed. by Daunton, M. (Cambridge: Cambridge University Press, 2000) p.140
[35] Ibid. pp.146-7
[36] Kearns, G., 'Town Hall to Whitehall: Sanitary Intelligence in Liverpool, 1840-63 ', in *Body and City*, ed. by Sheard, S. and Power, H. (Aldershot: Ashgate, 2002) pp. 89 - 108
[37] Sheard and Power, eds. p.11
[38] Kearns p.108
[39] Brand, J. L., *Doctors and the State: The British Medical Profession and Government Action in Public Health, 1870 - 1912* (Baltimore: John Hopkins Press, 1965) p.9
[40] Citied in Ibid. p.45

1.2.2 National: England and Wales

Despite having a clearly local focus, a portion of this thesis provides a national perspective to the development of port health. Previous histories of port health have mapped the development of quarantine from a legal perspective, namely the emergence and passing of parliamentary acts.[41] This thesis will go beyond this and examine the influence of orders in council on the actual practice of quarantine.[42]

To understand English port health fully, it is necessary to recognise clearly why PSAs were introduced in 1872. To comprehend the reasons for their introduction, as well as examining the establishment of one such authority in Southampton, it is essential to consider nationally why and how they were established through government commentary on the matter and the resulting legislation.

Though these are investigated from a national perspective, this is restricted by the organisation of nineteenth-century legislation. Quarantine legislation was implemented across Britain so references in this work will be to British quarantine. However, public health legislation was often divided according to three geographic regions: England and Wales, Scotland, and Ireland. Public Health Acts were passed for each region at different times. For example, the Public Health (Scotland) Act, 1867, emerged nearly 20 years after the Public Health Act, 1848, which focused on England and Wales.[43] Due to this legal diversity, comparisons have been restricted to ports within one region; here this will be England and Wales. In this thesis all references to England or English can also be understood to apply to Wales and the Welsh as they refer to both England and Wales.

1.2.3 Global: 'International' Influence

In addition to the local and national perspectives used, and in order to provide a complete picture of the development of port health, in particular the continued use of quarantine up to 1896, it is necessary to provide an international perspective. Maglen has suggested that there was an aspect of international influence on the British practice of quarantine.[44] This is explored further here through discussions that took place at the International Sanitary Conferences (ISCs) during the nineteenth century.

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[41] See Mullet, C. F., 'A Century of English Quarantine (1709-1825)', *Bulletin of the History of Medicine*, vol. XXIII (1949), 527-545, McDonald , and Collingridge, W., 'The Milroy Lectures: On Quarantine Part I', *British Medical Journal*, vol. 13 March 1897 (1897), pp.646 - 649

[42] These orders in council are also referred to as quarantine orders.

[43] Public Health Act, 1848 (11 & 12 Vict. c. 63) and Public Health (Scotland) Act, 1867 (30 & 31 Vict. c. 101)

[44] Maglen p.427

Although these conferences were 'international', the majority of those that took place were based in Europe with predominantly European delegates and representatives from British India. The first perhaps truly international conference took place in 1881 in Washington with both North and South American delegates in attendance. Therefore the term international is used from the perspective of the ISCs, rather than in a truly global sense.

The international context will also be explored in relation to the timing of the abolition of quarantine in 1896. Baldwin has argued that Britain did not 'abandon the protection of quarantine until they felt secure behind the bulwark of their hygienic reforms'.[45] An examination of quarantine and its abolition in chapter three demonstrates that international politics and national bureaucratic factors played a more significant role than national 'hygienic reforms'.[46]

1.3 Thesis structure

The themes for this thesis have emerged from previous research on port and public health. The areas examined can be split into national questions and local case studies. The first part of the thesis will address the two important questions of why Port Sanitary Authorities were established in 1872 and the reasons for the abolition of quarantine in 1896. The second part is a micro-study of Southampton that will look at the establishment of the local PSA and its development as a working authority, and then examine the impact of trooping on the PSA's practices and the spread of disease.

Previous work has discussed attempts by anti-quarantine reformers to abolish quarantine and introduce a more enlightened system, and others have discussed aspects of the introduction of the PSAs. However the link between the activity of reformers and the introduction of PSAs has not been examined. Chapter two explores how the development of quarantine and introduction of PSAs were influenced by a variety of social, political and international factors providing a background to the subsequent case study on Southampton. It highlights the importance of quarantine orders in dictating the practice of quarantine, including the introduction of sanitary measures such as disinfection and the removal of patients to shore hospitals. This chapter illustrates that the introduction of PSAs was part of a wider move to improve the health of the nation by streamlining what had become an unclear system of public health.

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[45] Baldwin p.150
[46] Ibid.

Chapter three explores the reasons why and the extent to which quarantine was maintained in Britain until 1896 and consequently the reasons why quarantine was eventually abolished. This includes an examination of the public and port health legislation between 1825 and 1896, the international factors influencing the development of national quarantine, attempts by MPs to abolish the practice and finally revisits the development of the meaning of 'quarantine' over the nineteenth century. With the final quarantine station at the Motherbank, close to the port of Southampton, this chapter will draw upon local examples of how quarantine was used in practice, beginning the case study of port health in Southampton.

Chapters two and three provide a solid backdrop from which the practices of port health locally can be examined. They also begin to bridge the gaps in current literature on the national port health policies and the reasons behind their development. Chapters four and five develop the case study focusing on the development of the port of Southampton. Chapter four details the establishment of Southampton's PSA including its geographical boundaries and scope of responsibilities. Maglen has provided the conceptual groundwork on the high-level details about PSAs. However, the connection between the practices of the port and public health authorities has not been developed. The relationship between PSAs and the local public health authorities needed to remain on positive grounds to prevent successfully the spread of any disease arriving at the port. The need for cooperation is something Hardy emphasises in relation to health arrangements at a smallpox hospital. She notes that MOHs worked with local authorities to allow a better system of control.[47] Brayshay and Pointon's study of public health in Plymouth highlights the importance of investigating the relations between public and port health authorities to control and prevent the spread of disease.[48] An assessment of the port of Southampton will establish whether port health was an integral part of internal public health, as Maglen argues, or whether the two had clearly separate roles, as Baldwin has argued.

One reason for the lack of research on the relationship between port and public health authorities could be related to Lawton and Lee's observation that 'port-cities, in general, showed little concern to protect health and in individual cases local councils actively opposed the implementation of public health legislation or fulfilled statutory

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[47] Hardy, A., 'Public Health and the expert: The London Medical Officers of health, 1856 - 1900', in *Government and Expertise Specialists, Administrators and Professionals 1860- 1919*, ed. by MacLeod, R. (Cambridge: Cambridge University Press, 1988) pp. 128 - 142

[48] Brayshay and Pointon

obligations with something less than enthusiasm'.[49] By investigating measures implemented locally, chapter four demonstrates that contrary to Lawton and Lee in Southampton the protection of health was at the forefront of the work of the PSA.

This chapter also explores the relationships between port, public, private, voluntary and military health facilities and authorities. These are considered through the implementation of local measures and the resolution of accommodation problems. In doing so, this chapter illustrates that the boundaries between port and public health, state and voluntary facilities and between Southampton and regional health authorities were considerably more fluid than a national history of port health has suggested.

Chapter five draws together the histories of public health, port health, war and trooping. Despite the strong connections made between war and medicine, the impact of war and the return of troops to Britain on port health practices and the local port town's health are rarely considered.[50] The only exception is perhaps the influenza pandemic of 1918 for which troops are regularly considered a significant factor in the spread of the disease.[51] This chapter begins to provide a better understanding of the impact of troops on port health practices, and demonstrates how Southampton's PSA was forced to alter working practices to continue to prevent the spread of disease.

There is currently a lack of literature on the development of port health in the twentieth century. Although it does not provide a conclusive analysis of twentieth-century port health, chapter five begins to pave the way for further research on the impact of the First World War on port health and the relationship between troops and the health of the port town at home in the twentieth century.

1.4 Sources

In order to provide local, national and global perspectives, this research has employed an multi-dimensional approach using social, political and statistical sources. The examination of national reasons behind the continuation and abolition of quarantine and

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[49] Lawton and Lee, eds. p.26

[50] A variety of histories that acknowledge and demonstrate the impact of war on medicine includes McCoy, O. R., 'Malaria and the War', *Science*, vol. 100 (1944), pp.535 - 539, Evans, R. J., 'Epidemics and Revolutions: Cholera in Nineteenth-Century Europe', *Past and Present*, vol. 120 (1988), pp.123 - 146, Smallman-Raynor, M. R. and Cliff A.D., *War Epidemics: An Historical Geography of Infectious Diseases in Military Conflict and Civil Strife* (Oxford,: Oxford University Press, 2004), Reznick, J., *Healing the Nation: Soldiers and the Culture of Caregiving in Britain during the Great War* (Manchester: Manchester University Press, 2004)

[51] See for example Phillips, H. and Killingray, D., eds., *The Spanish Influenza Pandemic of 1918 - 19*(New York: Routledge, 2003) in particular chapters 5 ('Japan and New Zealand in the 1918 influenza pandemic: comparative perspectives on official responses and crisis management' pp 73 - 85), 6 ('Coping with the influenza pandemic: the Bombay experience' pp. 86 - 98), and 9 ('The overshadowed killer: influenza in Britain 1918- 19' pp. 132 - 155)

the introduction of PSAs, as well as the local administration of Southampton's PSA, involves the use of documents such as parliamentary bills, government reports, conference reports and government correspondence. These sources provide details on government policy-making but are limited in that they do not show how PSAs and quarantine worked in practice. This is addressed by the use of sources such as newspapers, oral testimonies, autobiographical accounts, local correspondence, local annual MOH and PSA reports, and council reports, minutes and correspondence.

Alongside these 'traditional' historical sources, quantitative techniques will be employed. This approach is regularly used by historical demographers to examine morbidity, mortality and fertility rates. In chapter five, statistics are used to establish whether Southampton's PSA was able to prevent the spread of disease when an increased numbers of troops were passing through the port and to identify and compare the occurrence of particular diseases. The majority of data used has been found in annual reports on the health of the town and port of Southampton. At this point the thesis adopts a demographic perspective. Where it is deemed necessary, the specific advantages and disadvantages of the sources used are discussed in more detail in the relevant chapters.

This research brings together the advantages of both qualitative and quantitative approaches. An analysis of documentary evidence from national and local perspectives is combined with quantitative data to provide a balanced picture of the history of port health and its working practices.

1.5 Summary

This thesis comprises four thematic chapters. The first explores the reasons behind the introduction of Port Sanitary Authorities in 1872 and in doing so charts the history of quarantine between 1825 and 1872, including the important use of quarantine orders, placing the development of Southampton's port health in its national context. The second chapter examines the reasons why quarantine was abolished in 1896, investigating the national and international influences leading to the continued use of a bitterly disliked practice, and the imbalance between the influences of politics versus medicine. This also includes a look back at what was meant by quarantine and how this changed over the nineteenth century. Chapter four explores the introduction of Southampton's PSA and looks at how port health worked in practice. Using the resolution of local accommodation problems this chapter also explores how the different health authorities, both voluntary and state run, in and outside Southampton worked together to prevent the spread of infectious disease. The final chapter looks at the impact of trooping on

Southampton's port health practices to understand how port health measures worked and assess the impact of war on port prophylactic measures.

As a micro case study of port health in Southampton, this thesis highlights the use of local studies as a way to explore port health, using an multi-dimensional approach to research and employs a variety of traditional and statistical sources. This research investigates disease prevention from the perspective of port health rather than public health. It will demonstrate the strong influence of political and social factors on a medical issue and in doing so will bridge some of the current gaps between port and maritime histories and medical, social and political histories.

Chapter 2: Quarantine and the origins of Port Sanitary Authorities

Before 1872 quarantine was the main system in place to prevent the spread of infectious diseases from ship to shore. From 1872 onwards quarantine worked alongside Port Sanitary Authorities (PSAs). Although previous research has examined different aspects of the PSAs work, the origins of these authorities have not been explored. In relation to the introduction of PSAs academics have argued that these authorities ensured 'the deficits in non-quarantineable disease control at the ports were [...] rectified' as they 'only had jurisdiction over diseases which were non-quarantineable'.[52] However, it is also argued they provided an 'alternative to quarantine' because the public, traders and doctors disliked quarantine.[53] As will be seen later, PSAs dealt with non-quarantineable diseases; however, due to the quirks in the practice of quarantine they also dealt with quarantineable diseases, such as plague and yellow fever. Maglen has argued that PSAs were 'created to work alongside the extant system of quarantine'.[54] Baldwin has referred to this two-pronged approach as neo-quarantinism, where Britain 'refused to choose absolutely between the two approaches'.[55] However, as this chapter will show, many others factors were involved in the introduction of PSAs.

This chapter will detail the development of quarantine between 1825 (the year of the last quarantine act in Britain) and 1872 (the year the Public Health Act, 1872, introduced PSAs), and establish why and how PSAs came into being. In deconstructing the reasons for the introduction of PSAs, an analysis takes place of the individual and commercial dislike of quarantine, the development of quarantine (1825-1872), the influence of the International Sanitary Conferences (ISCs) on British quarantine working practices, the involvement of a government movement to improve public health and finally the consolidation of public health authorities. In analysing these themes, larger issues such as medical notions of contagion are also explored.

2.1 Quarantine 1825-1872

2.1.1 Development of quarantine 1825-1872

According to McDonald the Quarantine Act, 1567 introduced the practice of quarantine to Britain.[56] This Act remained in force until the Quarantine Act, 1710, which 'obliged

[52] Maglen p.423
[53] Ibid. p.423
[54] Ibid. p.423
[55] Baldwin p.149
[56] McDonald p.22

all ships coming from infected places more effectually to perform their quarantine'.[57] Although amended, the 1710 Act effectively remained in force for 115 years, and specifically stated that

> No master should go on shore or permit any passenger or member of his crew to do so without a license; otherwise the ship was forfeited to the queen [*sic*]. Persons going on shore were to be returned to quarantine. Any boat on the ship might be seized during detention by the quarantine officer who would maintain watches to prevent any coming or going on. After detention the ship could be certified and proceed on its way; after quarantine also the cargo would be opened and aired. [58]

Some academics have argued that the 1710 Act was put in place to ensure 'more stringent penalties' on 'individuals attempting to evade' quarantine.[59] Mullet has even argued that 'continued contumacy [...] permitted their deaths as felons'.[60]

Between 1710 and 1825 various amendments and acts were passed relating to quarantine, which historians have comprehensively discussed.[61] Only the 1825 Quarantine Act will be discussed in detail here as it was the last formal quarantine act in Britain and was the statute guiding nineteenth-century quarantine.

Mullet and Booker have each thoroughly discussed the passing of the 1825 Act through Parliament and the debates it entailed. Mullet notes, 'few earlier bills had excited much actual debate'.[62] A number of petitions were laid before Parliament. According to Mullet, by 1825 'a revolution had occurred, largely through the activity of Charles Maclean', a physician in the East India Company and for a short while the British Army.[63] Maclean (c.1766-1824) argued that 'the "anti-commercial, anti-social and anti-Christian quarantine laws" should be repealed'.[64] Even the newspapers had to correct popular beliefs about the purpose of the bill. In relation to the bill's passage through Parliament, *The Times* reported that 'the bill for the alteration, and not, as some have supposed, for the abolition of the Quarantine Laws, was read'.[65] These debates illustrate the frustration already felt by many towards existing quarantine practices.

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[57] Hutchinson, A., 'Disease Subject to the International Health Regulations', *Royal Society of Health Journal*, vol. 94 (1974), 107-109, 113 p.107

[58] Mullet p.529

[59] Quarantine Act, 1710 (9. Ann. c. 2), Hutchinson p.107 and Mullet p.529-530

[60] Hutchinson p. 107 and Mullet p. 530, p.538

[61] See for example: Mullet , McDonald and Harrison, M., 'Disease, diplomacy and international commerce: the origins of international sanitary regulation in the nineteenth century', *Journal of Global History*, vol. 1 (2006), pp.197-217

[62] Mullet p.538 Booker *Maritime Quarantine: The British Experience 1650 – 1900* (Aldershot: Ashgate, 2007), in particular chapter 12 'Anti-Contagionism in Britain 1805 – 1825'.

63 Ibid. p.539. For further details on Maclean's career see: Mark Harrison, "Maclean, Charles (fl. 1788–1824)," in Oxford Dictionary of National Biography (Oxford: Oxford University Press, 2004), http://www.oxforddnb.com/view/article/17649?docPos=1 (accessed 6 December 2008).

[64] McDonald p.26, and Mullet p.540

[65] 'Parliamentary Proceedings-Quarantine Law', *The Times*, 04 June 1825, p. 2 col. d

Despite petitions the Act came into force on 1 June 1825, repealing all previous acts and provisions relating to quarantine.[66] Under the Act any ship, including His Majesty's Ships of War, 'coming from or having touched at any place whence His Majesty [...] shall have adjudged and declared it probable that the Plague or other infectious disease or distemper highly dangerous [...shall] be considered to be liable to Quarantine'.[67] To ensure everyone knew whether a vessel was liable to quarantine the Act stated that whenever the vessel met another vessel at sea, or was 'within two leagues of the coast of the United Kingdom' the vessel was to 'hoist a signal'.[68] During the day, this signal was a yellow flag, indicating the ship had a clean bill of health, or a yellow flag 'with a circular Mark or Ball, entirely Black in the middle thereof' indicating the vessel did not have a clean bill of health; that is, at least one person on board had or showed symptoms of plague or an infectious disease (see Figure 2.1).[69] At night, the signal was a lamp elevated on the masthead regardless of whether the vessel carried a clean or foul bill of health. These signals had to remain visible until the vessel had performed or been 'legally discharged from' quarantine.[70] If the vessel carried plague then the same day signals applied but at night they were to raise two large lamps on the masthead.[71] Penalties were in place for vessels not displaying the correct signal, including those showing the yellow and black flag when the vessel was not liable to quarantine.[72]

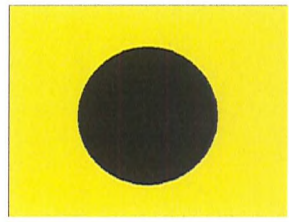

Figure 2.1 Quarantine Flag

Upon arrival in Britain a vessel liable to quarantine had to submit their bill of health and log book to the Customs Official or MOH. The vessel's Master or ship's surgeon was then asked a set of 'quarantine questions' so the authorities could ascertain whether the vessel 'be actually infected' or had experienced suspicious cases of sickness or death, and to determine its entitlement to free practique.[73] The Master, or person in charge, was required to 'give a true Answer in Writing'; 'a false answer' resulted in a

[66] Quarantine Act, 1825 (6 Geo. 4 c.78). Mullet provides a comprehensive history of these acts and the history of quarantine generally between 1709 and 1825. A more recent account of the development of the 1825 Act is made by Booker pp. 383-403.
[67] Quarantine Act, 1825 section 2
[68] Ibid. section 8
[69] Ibid. section 8
[70] Ibid. section 8
[71] Ibid. section 9
[72] Ibid. section 10
[73] Free practique means a vessel has no quarantineable cases on board and is free to continue on their travels. It is only once this is issued that a vessel may continue its passage.

penalty of £200.[74] Vessels could also be instructed to go to a specific port to undergo their quarantine.[75] As well as passengers, cargoes could not be landed during quarantine. The fine for landing goods during quarantine was £500. Once the quarantine period was over the 'vessel and all and every such Person or Persons so having performed quarantine' would be given a certificate (the bill of health) stating they had undergone quarantine as required and would be 'liable to no further restraint'.[76]

The Act stated that 'from time to time' and as often as required, vessels coming from ports with 'yellow fever or other highly infectious distemper' may be stopped and 'the states of health of the crew [...] ascertained before such vessel be permitted to enter the port'.[77] In these cases vessels were not required to undergo quarantine unless 'afterwards specially ordered under that Restraint'.[78]

'Upon any unforeseen Emergency' these regulations would change 'as shall from time to time be directed by His Majesty [...via an] Order or Orders in Council, notified by proclamation or published in the *London Gazette*'.[79] Orders issued over the following fifty years complicated quarantine practice, especially as many only remained in force for limited periods according to disease outbreaks.[80] The first Order, issued in July 1825, clarified some unclear aspects of the Quarantine Act, 1825, including more detail on quarantine questions and where quarantines were to take place.[81] It also clarified the length of quarantine periods, which had been omitted from the Act.

Before the 1825 Act was passed, the length of time for which a vessel could be quarantined ranged between 40 and 60 days.[82] In 1824, a quarantine committee reported that ships arriving with foul bills of health because of plague or yellow fever outbreaks were being quarantined for 60 to 65 days.[83] The same committee recommended this period be reduced to 21 days.[84] Unfortunately the 1825 Act did little to clarify the situation. The first Order in Council stated a minimum quarantine of 15 to 30 days depending on the crew's state of health and any diseases onboard or present at the last port visited. For example, quarantine was a minimum of 15 days if the vessel held a clean bill of health, indicating there was no disease outbreak at the last port visited, and if

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[74] Quarantine Act, 1825 section 14
[75] Ibid. section 15
[76] Ibid. section 23
[77] Ibid. section 3
[78] Ibid. section 3
[79] Ibid. section 6
[80] Orders in Council are considered to form part of the law, even if it is only for a temporary period, and thus revoked at a later date.
[81] Quarantine Order 19 July, 1825
[82] Maglen and McDonald p.26. Details of the 1825 Act are most recently discussed in Booker, pp. 401-3.
[83] Maglen pp.416 – 417, Quarantine Act, 1825
[84] Maglen p.417

all crew and passengers were free from disease.[85] For vessels arriving with a 'foul' bill of health quarantine was 30 days, whilst a 'suspected' bill of health was 20 days. For ships arriving from plague-infected areas, the cargoes had to be aired for 21 days, after which the vessel would then start a quarantine of 30 days. This order also provided specific details on quarantine locations for vessels; for example, all 'ships of war, [and] transports of other vessels in the actual service of [...] Her Majesty's Navy' with foul bills of health returning to any British port were to report to the Motherbank near Portsmouth.[86]

So far, historians have not established how these orders shaped quarantine practice in Britain. Booker reports the introduction of the 19 July 1825 order noting it was normal and that it explained 'how quarantine would be administered'.[87] The orders continued to play an important role in the development of quarantine over the nineteenth century; for example, in 1866 when the S.S. *Tasmanian* arrived in Southampton with yellow fever, it was only remained in quarantine for 13 days, less than half the 30 days the 1825 Order dictated for vessels arriving with a foul bill of health. This change took place without a new quarantine act being issued, illustrating the significant role these orders played in changing quarantine practice.[88]

Throughout the century quarantine orders provided authorities with information on disease outbreaks and made alterations to quarantine regulations. For example, an order dated 7 March 1867 stated that to 'avert the risk of English shipping and commerce being subjected to the inconvenience of Quarantine in Foreign Parts, [...] no unnecessary restriction or avoidable delay should be imposed'.[89] This was interpreted at the time to mean, if a case of yellow fever had not occurred 14 days before arrival at the port and so long as the relevant clothing and bedding had been fumigated or destroyed, the vessel would not be quarantined.[90]

Other orders related to specific incidents, such as the arrival of the Mail Packet S.S. *Douro* in Southampton from St. Thomas, West Indies, in July 1867. No specific details are given of the incident, but it was noted that there seemed 'to be some doubt as to the interpretation to be put upon the instructions contained in their Lordships' letter to the Commissioners of Customs, dated 7th March 1867'.[91] This confusion led to an order

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[85] Quarantine Order, 1825 p.8 and p.12
[86] Ibid. p.4 section 4
[87] Booker, p.442
[88] McDonald p.30
[89] The National Archives Board of Customs Quarantine Orders and Detentions, CUST 149/1 (1866) Quarantine Order 7 March 1867
[90] Ibid.
[91] Ibid. Quarantine Order 10 August 1867

clarifying that ships were automatically 'admitted free practique' if they were arriving from ports within the following coordinates: 24°N 052°W, 24°N 082°W, 04°N 082°W and 04°N 052°W.[92] This covered the ports Guayaquil to Panama: Colon to Florida Straits, and Cayenne to a point in the North Atlantic, enclosing all the Caribbean islands. At the 1851 ISC in Paris, it was suggested that ships carrying plague should be quarantined for a minimum of ten days and up to a maximum of fifteen.[93] For yellow fever, delegates proposed five to seven days observation under quarantine for all vessels arriving from infected ports.[94] Thus the period of quarantine was continually changing, influenced by both national and international factors.

These changes and confusion was recognised when the 1851 British ISC delegates requested all current documentation on British quarantine law. They were informed that the 'only document that can be given as the Quarantine Regulations now in force in the United Kingdom' were those laid down in 1825, namely the Quarantine Act, 1825 and order in council of July 1825. [95] These were sent with the caveat that they were 'obsolete in consequence [of] the great and gradual reduction in the period of quarantine'.[96]

Both the 1825 Quarantine Act and subsequent orders in council caused lots of confusion, as reflected in inconsistent approaches and poor implementation of quarantine across Britain. Two cases in 1859 from Liverpool and Southampton demonstrate this well. After landing at Southampton with a slight fever an unnamed crew member from S.S. *La Plata* (a mail steamer) died of chagres fever.[97] The ship's surgeon was aware of the individual's fever, but did not inform the captain because the patient's condition had improved by the time of disembarkation.[98] According to regulations, the surgeon should have informed the captain of any patients with symptoms of yellow fever, plague or cholera. When the patient relapsed once on shore, local doctors believed the fever to be symptomatic of yellow fever. (It is unclear at what stage the death was pinpointed to chagres fever rather than yellow fever).

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[92] Ibid. Quarantine Order 10 August 1867
[93] The National Archives Privy Council, PC 1/4533 (1851), Letter dated 1 Sept 1851
[94] Ibid.
[95] Ibid. Letter 2 August 1851
[96] Ibid. Letter 2 August 1851
[97] The Webster's Revised Unabridged Dictionary, 1913 defined 'Chagres fever' as 'a form of malarial fever occurring along the Chagres River'(see http://www.webster-dictionary.org/). It was also known as Panama fever, 'fever and ague' or ague. Its symptoms were similar to those of Yellow Fever. Today this a known virus caused by 'Bunyaviridae, an agent of bunyavirus encephalitis' (see http://www.medicineword.com/Chagres+virus.shtml). This incident resulted in Dr Sutherland's investigation and report of 1852. Southampton City Archives, D/PM Box 104/40/6 (1852)
[98] The National Archives Privy Council, PC 1/4535 (1859), letter dated 3 March 1859

After the death of this crew member, the Directors of the Royal Mail Steam Packet Company and Sir William Pym (1772-1861), Superintendent of Quarantine at the Privy Council, undertook an investigation. The Royal Mail Steam Packet Company regretted that 'the strict instructions issued by them from time to time had not in this instance been thoroughly acted upon'.[99] As a result Pym advised the company to issue instructions on quarantine regulations to all its vessels.[100]

The case in Liverpool involved an impromptu boat race organised by the local MOHs, including Mr Mollitor, MOH for Liverpool. The finish line was a vessel that had recently arrived in the harbour. According to quarantine regulations, the MOH had to obtain a clean bill of health and ask a set of quarantine questions before boarding any vessel.[101] However, Mr Mollitor breached quarantine regulations by boarding the ship without obtaining answers.[102]

Poor implementation is not isolated to these incidents but also emerges in the lack of consistency in the administration of quarantine. In 1859, on behalf of the Board of Customs, Maclean requested quarantine officers in London, Southampton, Liverpool, Falmouth and Standgate Creek to provide details on the procedures they each used for asking the quarantine questions.[103] Although following similar procedures, each port answered the questions in slightly different ways.[104] For example, a copper box was used to fumigate the written and signed answers at Rock Ferry and Standgate Creek, whilst at Falmouth the officer 'receives at the ships side the requisite replies'.[105] Although minor, this illustrates there were differences in local practices of quarantine and thus an inconsistent approach to quarantine across the country.

In 1860, the British Government acknowledged the problems with quarantine and the poor implementation of the practice stating that 'the flagrant evil of the present quarantine system is that it is *not* a "system", but on the contrary, that its interferences, obstructions, and delays, are all aggravated by the fact of its inequalities, inconsistency, and uncertainty'.[106] Quarantine as a practice was constantly changing because of quarantine orders and inconsistent due to poor implementation and varying interpretations of the law. Through all this, however, one thing that did not change was

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[99] Ibid., letter dated 3 March 1859
[100] Ibid., letter dated 3 March 1859. Booker has also discussed this case, but referenced no sources pp. 513-6.
[101] Quarantine Act, 1825 section 14
[102] TNA, PC 1/4535 letter dated 3 March 1859
[103] The National Archives Privy Council, PC 1/4536 (1859) March 1859
[104] Ibid. March 1859
[105] Ibid. March 1859
[106] The National Archives Foreign Office General, FO 881/865 (1860) p.2

the ill feeling towards quarantine by groups such as travellers, traders and medical professionals. By understanding the problems with quarantine, we can begin to understand the origins of Port Sanitary Authorities.

2.1.2 Quarantine and its problems

Shipping played a central role in international commerce throughout the nineteenth century. Ports acted as important gateways not only for people leaving and entering a country, but also for the import and export of goods. However, maritime quarantine led to costly and what were seen by some as unnecessary delays. Looking back on the century, in 1897 Dr W. Collingridge noted that 'the most serious objection to quarantine, however, apart from its futility, is the actual danger to health' because it allowed the further spread of a disease amongst the quarantined passengers.[107] He was by no means the first to complain about quarantine.

As seen with the debates before 1825, people considered the quarantine laws to have 'produced immorality, obstructed travel, commerce, navigation and manufactures, destroyed expeditions and armaments, injured the general consumer and the public revenue'.[108] Official reports considered quarantine problematic. An 1854 report on the administration of the Public Health Act, 1848, and the Nuisance Removal and Disease Prevention Act, 1848, by Shaftesbury, Chadwick and Southwood-Smith stated that 'quarantine establishments in this country [Britain] and in every other of which we have information, are wholly insufficient'.[109] The report suggested 'the entire discontinuance of the existing quarantine establishments in this country' because of its 'grievous inconveniences [...and] false representations of its nature', namely the claim that quarantine was in place for medical purposes.[110]

Individuals were equally willing to voice their opinions. Between 1841 and 1853, the Editor of *The Times* received many letters bemoaning the 'unnecessary detention', 'absurdities and despotic annoyance' and 'pains and penalties' of quarantine.[111] It was

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[107] Collingridge, W., 'The Milroy Lectures: On Quarantine Part II', *British Medical Journal*, vol. 20 March 1897 (1897), pp.711 - 714, p.712

[108] Mullet p.540. See also Harrison p.214

[109] P.P. Vol. xxxv C. 1768 *Report by the Board of Health on the Administration of the Public Health Act and the Nuisances Removal and Diseases Prevention Act from 1848 to 1854* (1854) Annex No.III pp. 69-70. For the acts see Public Health Act, 1848, and Nuisances Removal and Diseases Prevention Act, 1848 (11 & 12 Vict. c. 123).

[110] *P.P. xxxv C. 1768* Annex No.III pp. 69-70. For the acts see Public Health Act, 1848, and Nuisances Removal and Diseases Prevention Act, 1848.

[111] See the following articles respectively: 'Quarantine Regulations', *The Times*, 20 April 1842, p. 8 col. c, 'Quarantine System', *The Times*, 10 August 1841, p. 5 col. b, 'Quarantine Absurdities', *The Times*, 19 November 1853, p. col. c

also the apparent 'farce of quarantine' that caused anger amongst individuals.[112] In a letter to *The Times*, a traveller noted that whilst in quarantine off the shores of Spain and Portugal locals came to the side of vessels in boats selling fruit. Passengers would buy fruit, exchanging goods and money, and then sellers returned to the mainland apparently ignorant of quarantine.[113]

The inconvenient delays clearly angered passengers and they were not alone. Quarantine periods abroad of between 20 and 80 days equally annoyed merchants because of the restrictions this caused to the movement of trade.[114] For traders quarantine was 'a source of losses, a limitation to expansion, a weapon of bureaucratic control that [...they were] no longer willing to tolerate'.[115] The financial loses from quarantine were great. In 1949, Mullet claimed 'quarantine [had] cost £200,000 a year, independent of colonial losses', the equivalent of £12 million today.[116] Harrison has more recently noted that earlier critics of quarantine 'estimated that its annual cost to Britain amounted to between two and three million pounds, with similar losses incurred by merchants in the Mediterranean'.[117]

As well as being frustrated by the practice at times quarantine caused alarm and fear in local populations. The arrival of the S.S. *La Plata* and S.S. *Medway* at Southampton in 1852 caused panic in the town. An engineer, who disembarked the S.S. *La Plata* on 6 December died from yellow fever. The S.S. *Medway* then arrived on 9 December having experienced five deaths and seventeen cases of sickness from yellow fever.[118] According to newspaper reports these incidents 'excited great alarm in the town'.[119] Dr John Sutherland, (1808-1891), Inspector for the Board of Health, investigated the matter and concluded that 'considerable alarm existed in Southampton, after the arrival of the Medway and the Plata'.[120] In his report on the quarantine of the S.S. *La Plata* Sutherland stated these anxieties were groundless. Interestingly, some residents also feared the removal of quarantine because it could mean 'possible dangers

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[112] 'Quarantine Absurdities', *The Times*, 09 March 1850, p. 8 col. f
[113] *The Times*, 19 November 1853, col. c
[114] McDonald p.30
[115] Ackerknecht, E., 'Anticontagionism between 1821 and 1867', *Bulletin of the History of Medicine*, vol. XXII (1948), 562-593 p.567
[116] Mullet p. 540. £200,000 in 1825 is the equivalent of £12.7 million in 2005, as calculated using converter – How much is that worth today? Officer, L. H., *Comparing the Purchasing Power of Money in Great Britain from 1264 to Any Other Year Including the Present*, Economic History Services, 2001) <http://www.eh.net/hmit/ppowerbp/ >. [accessed 21 January 2008]
[117] Harrison p.213
[118] 'La Plata', *The Hampshire Advertiser* 11 December 1852, p. 5 col. b
[119] 'The Yellow Fever and the West India Steam-Ships', *Hampshire Independent*, 11 December 1852, p. 5 col. b
[120] SCA, D/PM Box 104/40/6

to the public health', such as those presented by the S.S. *La Plata* and S.S. *Medway*.[121] In response to public concerns about the removal of quarantine, Sutherland indicated a personal disapproval of quarantine and even argued that the continued use of quarantine 'might have been very disastrous to the persons retained on board vessels'.[122]

The fear and alarm caused by diseases such as yellow fever, resulted in a national circular. In 1878, the Local Government Board (LGB) issued a circular 'to allay needless alarm about the extension of the disease [yellow fever]'.[123] Although not reporting specific anxieties, it demonstrates that apprehension in local communities was not only a problem in Southampton, and was an issue where preventive action was considered appropriate. Although these examples indicate the fear was from the disease, the pathologist and epidemiologist Dr. Adrien Proust (1834-1903) noted in a newspaper article in *The Times* that the English had 'fears of vexatious restrictions'.[124]

It was not only local people that were alarmed by the arrival of disease. Dr John Simon (1816-1904), the Chief Medical Officer for the LGB and Privy Council 1855-1876, argued that the presence of a disease in one port could lead to alarm across Europe. In 1875 he reported 'the infection of the disease [plague] in Baghdad' and believed 'any wide Eastern diffusion of the disease especially to the seaports of Turkey or Egypt, could hardly fail to excite alarm in Western Europe'.[125] For Simon it was not only that it would excite alarm but also that it could 'cause much derangement of traffic'.[126] Gray, Dawes and Co., a London based shipping and insurance company, observed 'the disease [plague...] occasioned less anxiety in the locality where it existed than the report that it was plague did everywhere else'![127]

In 1892 when quarantine was imposed on vessels arriving in Egypt from Marseilles, a British correspondent in Alexandria reported that this 'action seems to be the outcome of excessive precaution or unnecessary fear, most probably of the latter'.[128] The article does not indicate whether these fears were with the local population or the government officials. Some nineteenth-century contemporaries went as far to argue that the continued use of quarantine was due to fear and superstition. One Frenchman claimed that the 'absurdity of the whole thing [...] was done to satisfy the timid and superstitious

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[121] Ibid.
[122] Ibid.
[123] P.P. Vol. XXIX C. 2452 *Eighth Annual Report of the Local Government Board for 1878 - 9* (1878 - 9) p.16
[124] 'Quarantine in the Suez Canal', *The Times*, 13 June 1892, p. 6 col. a
[125] P.P. Vol. XXXVIII C. 1508 *Annual Report for Local Government Board (1875)* (1876) p.6
[126] Ibid. p.6
[127] 'Gray And Dawes On Plague And Quarantine', *The Times*, 20 April 1875, p. 6 col. e
[128] *The Times*, 27 October 1892, p.7 col. f

low class population of Marseilles'.[129] S. Oakley Vonderpoel, Professor of Hygiene at the medical department of the University of the City of New York, raised the same point in 1885 arguing quarantines are 'useless blind precautions', that are 'superstitious, and silly forms as practised for centuries in the south of Europe [...established] through instinct of fear'.[130] The idea that quarantine was maintained because of cultural ideas is not reflected elsewhere. Because of the changing geopolitical climate at this time, it is more likely that international politics was the main reason for quarantine and not local fear, this is not to say that quarantine did not insight fear.

It is plausible that the presence or arrival of quarantined vessels caused local alarm, as they were required to fly the yellow flag advertising that a vessel may be carrying an infectious disease. In 1879, H. Swift, of the Privy Council, argued that 'experience has shown the use of quarantine signals had been of great advantage'.[131] Although the flag was a sign meant for Customs Officers and MOHs, it was also a clear signal to the public, yet public knowledge of the quarantine flag is questionable. For example, in 1874 a father and his son boarded a vessel in Portugal to bid their friends farewell without realising the vessel was quarantined. When told to remain on the vessel, the father admitted 'it is true the yellow flag was flying; but I did not observe it, and knew nothing of the law of quarantine if I had seen it'.[132] In response to the incident, a letter signed F. R. M. remarked that 'getting into such a scrape evinced an amount of ignorance and negligence almost deserving punishment'.[133] Although it would be expected that port town communities understood the meaning of the yellow flag, it is not possible to state conclusively on the wider knowledge of the significance of the yellow flag.

The different fears and opinions about the practice of quarantine can be seen to reflect the *ad hoc* and varied nature of quarantine. It is likely experience of quarantine varied around the world, but for those involved, quarantine was quarantine regardless of where it took place; for them, the delays, annoyance and financial loss were the same.

The practice of quarantine was also considered problematic from a medical perspective. The effectiveness of quarantine as a medical measure to prevent the spread of disease was questioned even before the 1825 Bill became an Act. Maclean, argued that 'quarantines were really the cause of 19/20 of all epidemics [...and] were amoral,

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[129] 'Quarantine at Marseilles', *The Times*, 11 October 1883, p. 6 col. d
[130] 'Quarantines and their Scientific Value', *Science*, vol. 6 (1885) p.23
[131] The National Archives Privy Council, PC 8/ 246 (1879) p.5
[132] 'Quarantine, Notes about', *The Times*, 26 March 1874, p. 6 col. f
[133] Ibid. It is unclear who F. R. M. is or what experience of quarantine they had.

ineffective and the source of enormous gratuitous expenses and vexation'.[134] He referred to the practice of quarantine as a code that was 'unparalleled, perhaps, for absurdity and mischief'.[135]

The medical basis for quarantine continued to be questioned. An 1854 government report argued quarantines inflicted on 'passengers extreme and unnecessary inconvenience [...] while they maintain false accurities [*sic*] in relation to the means of preventing the spread of disease'.[136] British Consuls at Pernamabucco, Brazil (now Recife), claimed that 'no quarantine regulations of any sort have ever succeeded in excluding this disease [cholera] from any country which it has yet visited'.[137] This opinion was echoed across the medical profession.

When medical arguments against quarantine emerged, they often focused on one disease at a time. For example, some people argued yellow fever was not contagious and therefore not a quarantineable disease. In 1851 when reporting to the French *Académie Nationale de Médecine*, Dr Londe claimed Dr James Gilkrest's article 'Is yellow fever contagious or not?' demonstrated 'incontrovertible proofs' that yellow fever was not contagious.[138] Although he did not specify what these 'incontrovertible proofs' were, Dr Londe went on to state that this showed the 'inutility' of using quarantine in cases of yellow fever.[139] In addition, it was suggested by some that the disease could not survive in the British climate. In his 1852 report, Sutherland noted that in Jamaica all yellow fever cases were landed, 'and that in a climate to which the disease specifically belongs'.[140]

Sutherland also argued that 'in countries where quarantine restrictions are relied on for the preservation of the public health, it is generally the case that other precautions are neglected'.[141] Instead, he believed that for quarantine to succeed ports and ships had to be kept in good sanitary order, otherwise 'no improvement is carried out in sea-ports'.[142] He added that sanitary measures were important in preventing the spread of disease arguing that if ports and ships were not in good sanitary condition they would

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[134] McDonald p.25; Ackerknecht p.584
[135] McDonald p.25
[136] *P.P. xxxv C. 1768* p.12
[137] The National Archives Privy Council, PC 1/2666 (1852)
[138] The National Archives Domestic Records of the Public Record Office, Gifts, Deposits, Notes and Transcripts:, PRO 30/29/25/15 (1852) Dr James Gilkrest was an Inspector of Army Hospitals; his work was originally published in the *Bulletin of National Academy of Medicine* in October 1851.
[139] Ibid.
[140] SCA, D/PM Box 104/40/6
[141] Ibid.
[142] Ibid.

'throw the most serious obstacles in the way of the commerce of the port'.[143] Dr W. Collingridge argued in 1897 that the danger to health emerges 'from the detention of a large number of persons under conditions in most cases insanitary, and in all more or less unfavourable for the preservation of health on board an infected vessel'.[144] From this perspective, quarantine did not work because of an over-reliance on the practice and the neglect of other sanitary issues.

Theories on the spread of disease often fuelled the medical arguments for and against quarantine. Erwin Ackerknecht noted the link between contagion theories and quarantine in 1948. He stated that 'contagionism had found its material expression in the quarantines and their bureaucracy, and the whole discussion was thus never a discussion on contagion alone, but *always on contagion and quarantines* [his emphasis]'.[145]

The debates on contagion were of considerable importance and influence to the public health decision-making process, not only in England but also across Europe. These arguments resulted in the emergence of new ideas concerning the prevention of diseases such as plague. Of particular importance to this discussion on the development of British quarantine is the link that ideas on contagion made to political and social ideas of disease. As Huber has recently noted, this debate 'sheds light on the interaction between science and politics'.[146] To place the problems with quarantine in their full context it is necessary to provide a brief background to the contagion debates.

Although often referred to as a dichotomy, many scholars have noted in recent years that the debate between contagionists and anti-contagionists was not directly opposite.[147] Pelling questioned Ackerknecht's emphasis on the dichotomy and, as Cooter noted, challenged 'the validity of the historical use of the terms "contagionist" and "anti-contagionist"'.[148] Pelling believed the terms contagion and anti-contagion were 'inadequate for they misleadingly summarise the contemporary concern with epidemic diseases in terms of simple opposites when in fact medical reality was highly complex and multifaceted'.[149] This has meant current historians 'become as confused and as unproductive as [...] some nineteenth century theorists'.[150] She has recently claimed this

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[143] Ibid.
[144] Collingridge, 'On Quarantine, pt II' p.712
[145] Ackerknecht p.567
[146] Huber, V., 'The Unification of the Globe by Disease? The International Sanitary Conferences on Cholera, 1851 - 1894', *The Historical Journal*, vol. 49 (2006), 453 - 476, p.457
[147] Maglen ; Pelling, *Cholera* and also Pelling, 'Anti-contagionism'
[148] Pelling, *Cholera* and also Pelling, 'Anti-contagionism' , Cooter, R., 'Anticontagionism and History's Medical Record', in *The Problem of Medical Knowledge*, ed. by Wright, P. and Treacher, A. (Edinburgh: University Press, 1982) pp. 87 - 108, p.88
[149] Cooter p.90
[150] Pelling, *Cholera* p.302 – 303 and Pelling, 'Anti-contagionism' p.6

is 'often a reflection of contemporary lack of precision'.[151] Despite these arguments, and to preserve some clarity with previous literature, the terms contagion and anti-contagion are used here but with the caution of these current considerations in mind.

Before germ theory, contagionists 'visualised [the spread of disease] as the direct passage of some chemical or physical influence from a sick person to a susceptible victim by contact [...] through the atmosphere'.[152] The supposedly 'opposing' view to contagion was anti-contagion. Ackerknecht noted that anti-contagionists followed a 'localised "miasma" theory (poison arising from decaying animal or vegetable matter, "filth")'.[153] Maclean, who could be classed as an anti-contagionist, argued that 'Air [...] of all the agents which act upon the living body, [is] that which exercises the most diffusive influence'.[154] Although at the forefront of anti-contagionist ideas, and considered by Cooter to have introduced the idea to Britain, even Maclean 'did not deny the contagious nature of smallpox, syphilis and the exanthemata'.[155] Many people believed that the spread of disease could be explained by some combination of the two theories. These included groups of 'moderates' and '*contingent* contagionists'.[156] Cooter argued that the latter group believed 'that the cause of epidemic diseases were multifactoral, though related to the environment'.[157]

The key point of Ackerknecht's work is that these ideas were strongly related to social and political beliefs rather than medical concepts. For example, quarantine was a contagionist concept for preventing the spread of disease, and as such it was an area always 'suspect of all liberals trying to reduce state interference to a minimum'.[158] For him, this meant that 'anti-contagionists were thus not simply scientists; they were reformers, fighting for the freedom of the individual and commerce against the shackles of despotism and reaction'.[159]

In the case of quarantine versus purely sanitary measures, *laissez faire* political approaches and frustration with additional delays and costs incurred through trade led many to join the anti-contagionist camp, despite believing the transfer of disease could take place by means other than miasma. Ackerknecht claimed that 'from the miasmatic

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[151] Pelling, M., 'The Meaning of Contagion: Reproduction, Medicine and Metaphor', in *Contagion: Historical and Cultural Studies*, ed. by Bashford, A. and Hooker, C. (New York: Routledge, 2001) pp. 15-38, p.16

[152] Ackerknecht p.566

[153] Ibid. p.568

[154] Cooter p.97

[155] McDonald p.25, and Cooter p.96. Exanthemata are rashes that occur in many infectious diseases, in particular childhood diseases such as measles.

[156] Ackerknecht p.568

[157] Cooter p.90

[158] Ackerknecht p.567

[159] Ibid. p.567

or "filth" theory to a purely social concept was but a short step'.[160] More recently, Harrison has noted that although factors such as political liberalism (*laissez faire*) have 'been suggested as reasons why certain states sought to reduce the burden of quarantine, [...] there is little agreement about how far ideology had a consistent bearing upon sanitary policies'.[161]

Ackerknecht produced one of the earliest comprehensive discussions on nineteenth-century disease theories and there have been many reassessments since including Pelling in the 1970s, and Bashford and Hooker in 2001.[162] However, as Cooter notes, a tendency to focus on the scientific aspects of Ackerknecht's discussion 'withdraws attention from the need to think socially and critically about epidemiological thought in general and anti-contagionism in particular'.[163] The major achievement of Ackerknecht's approach 'was to reveal that the "medical" debate between contagionists and anti-contagionists was largely a social debate'.[164] Pelling has also recently acknowledged this, stating that it is 'inadequate to regard these concepts as purely medical'.[165] The importance of the social and political influences on medical issues becomes significant when assessing the history of quarantine and PSAs.

Ackerknecht has shown that the medical debate on contagion and anti-contagion was intrinsically tied to social and political factors.[166] Equally, social and political ideas strongly influenced how the problem that was quarantine should be resolved. The importance of ensuring delay-free trade and travel led to many complaints about quarantine; equally, doubts were cast over the ability of quarantine to prevent the spread of disease. The British Government noted that these problems were not just a British problem, with 'the treatment of the ship under precisely the same circumstances being difference [*sic*], both in form and degree, in almost every country bordering the Mediterranean'.[167]

2.2 Quarantine: Isolation and sanitary measures

The ideas and debates surrounding contagion and anti-contagion, particularly in relation to cholera (often referred to as Asiatic cholera) and sometimes plague, dominated the

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[160] Ibid. p.568
[161] Harrison p.198
[162] Pelling, *Cholera* and Bashford, A. and Hooker, C., eds., *Contagion: Historical and Cultural Studies*(London: Routledge, 2001)
[163] Cooter p.91
[164] Ibid. p.91
[165] Pelling, 'Contagion' p.16
[166] Cooter , Ackerknecht , Pelling, 'Contagion'
[167] TNA, FO 881/865 p.2

ISCs that took place in Europe between 1851 and 1874.[168] Previous port health literature has identified the influence of the international scene in terms of the ISCs, particularly in relation to the maintenance of the practice until 1896, which the next chapter discusses. However, the ISCs also influenced the development of quarantine in Britain and the sanitary measures adopted alongside it. Hardy has specifically argued that 'Britain's position as an island nation extensively involved in international trade was a crucial determinant in the development of her cholera exclusion policy'; and due to political and economic commitments Britain 'had to devise measures other than quarantine for the exclusion of imported infectious disease'.[169]

The ISCs were established against a backdrop of tension between European nations and as part of a need to protect Europe from cholera.[170] Different people had varying ideas on the precise purpose of the conferences. At the 1851 conference the British delegate, Anthony Perrier (1793–1867) British Consul at Brest, Brittany, believed 'public health [was] to be the sole object of the conference [...with the exclusion of] all political considerations'.[171] However, in later years the World Health Organisation looked back and noted that the early conferences had two main aims: 'The first was the removal of hindrances to trade and transport, and the second was the "defence of Europe" against exotic pestilences'.[172] Many works on the ISCs provide the defence of Europe as the reason for the conferences.[173] At the 1851 conference the President of the ISC claimed quarantine requirements were 'important services to the trade and shipping of the Mediterranean, while at the same time safeguarding the public health'.[174]

The first of these ISCs focused on cholera. The origins of cholera, which was of great interest to Britain as most dialogues concluded that India was the place of origin for the disease, dominated discussions at the first two ISCs.[175] At the 1866 ISC in Constantinople, delegates raised concern about the 'permanent' existence of cholera in India.[176] This was a controversial issue as 'the delegates from Britain and India

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[168] These were held in Paris (1851, 1859), Constantinople (1866), and Vienna (1874). The 1881 ISC took place in Washington, and after that, debates on the transmission of cholera did not dominate conferences. See Howard-Jones, N., 'The Scientific Background of the International Sanitary Conferences, 1851 - 1938', *WHO Chronicle*, vol. XXVIII (1974) for remarks on the dominance of cholera in discussions.

[169] Hardy, A., 'Cholera, Quarantine and the English Preventive System', *Medical History*, vol. XXXVII (1993), 250-269 pp.251-2

[170] See Harrison for a discussion on the origins of the ISCs.

[171] TNA, PC 1/4533 Results of the 8 following meetings held from 18 to 26 August

[172] World Health Organisation, *The First Ten Years of the World Health Organisation*, (Geneva:Palais Des Nations, 1958)
<http://whqlibdoc.who.int/publications/a38153.pdf>. [accessed November 2004], p.14

[173] Huber p.461

[174] World Health Organisation, p.36

[175] Huber pp.459 - 462

[176] The National Archives Privy Council, PC 1/2672 (1866), confidential letter 3 October 1866

[...showed] a fastidious sensitivity to any reference to the etiology of the disease'.[177] The British delegates felt a proposed 24-hour stoppage in the Suez Canal could hamper communication and trade with the British Empire and that 'the advantages of a shortened voyage between Bombay and the head of the Persian Gulf would be lost'.[178] These discussions were influenced by the changing medical and international political climates in which they were taking place.

Although these issues were sensitive to Britain, and possibly because they were, it was only really at ISCs that theories on the spread of disease were discussed in relation to quarantine. At the 1874 Vienna ISC, considerable time was spent discussing the scientific origins of cholera.[179] However, in Britain these concepts had very little influence on quarantine practice as cholera had not been a quarantineable disease since 1848, despite the rapid development of ideas on contagion and germ theory, by the end of the nineteenth century.

Alongside the controversial discussions on the transmission of cholera, which included Pacini, Snow and Pettenkofer's various theories, quarantine was discussed as a measure to protect Europe from plague and cholera. Though little reference was made to yellow fever, this disease completed the trio of 'quarantineable diseases'. During these conferences it was only Britain, France and Austria that agreed that quarantine was a nuisance and danger to public health that should be abandoned.[180] Regardless of the discussions, most academics agree that the first two conferences were a fiasco, with very little emerging from them in terms of ratified conventions until the end of the nineteenth century. Howard-Jones noted that after two conferences, there had been 'a total of eleven months of fruitless discussions'.[181] However, the draft conventions did inform and foster debate in Britain.

In previous nineteenth-century British Quarantine Acts, quarantine meant the isolation of ships to prevent the spread of disease; however, by 1851 international ideas were beginning to change.[182] The 1851 conference was set up to discuss 'the improvement of the system of quarantine'. Despite this, many of the suggestions related to sanitary measures rather than solely to isolation and quarantine, and even appeared in

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[177] Howard-Jones Part 3, p.382
[178] TNA, PC1/2672 Confidential Letter 3 October 1866
[179] P.P. Vol. XL C. 1370 *Report on European relations of Asiatic Cholera. No. 2 Abstract by Dr. Seaton of Proceedings of the ISC held at Vienna, July 1 to August 1, 1874* (1875) see also Howard-Jones for full details on the scientific discussions that took place regarding the transmission of cholera.
[180] Howard-Jones Part 1 p.163
[181] Ibid. Part 1 p.171
[182] Quarantine Act, 1800 (39 & 40 Geo. 3 c. 80.), Quarantine Act, 1825

the final draft conventions.[183] On 16 August 1851, the delegates unanimously voted that isolation was to be included in 'hygienic measures', which were both considered part of sanitary measures, with quarantine being listed independent of isolation.[184]

The 1851 draft convention stated that all countries involved in the ISC would 'agree to protect their sea frontiers against plague, yellow fever and cholera, by the joint adoption of the administrative and sanitary measures specified'.[185] These were the only three diseases subject to quarantine and the local public health boards were responsible for compliance.[186] In 1852, J. Emmerson Tennent commented on the use of sanitary measures.

> One of the most striking changes contemplated by the Sanitary Conference at Paris, is the organisation of an entirely new system of hygienic surveillance to be applied to all ships, whether with foul bills of health and arriving from countries infected by contagious epidemic, or with clean bills from countries free from any compromising disorder. These precautions are to be adopted by all the States parties to the Convention, in combination with, or rather in addition to [...] observation or actual quarantine.[187]

The British Government considered many opinions when deciding whether to accept the draft convention. In 1852, Lord Granville was 'determined that Her Majesty's Government should become party to the proposed convention'.[188] Despite some reservations, the Board of Health felt it would be a 'great practical advantage that the provisions [...] be early put into operation'.[189] However, the Board of Trade and Board of Customs disagreed stating 'that the application of these hygienic measures would cause great dissatisfaction to and be resisted by the mercantile interest' and noted 'there is no legal authority by which they could be enforced'.[190] They concluded that the measures proposed would be 'at variance with those principles of non-interference with the internal arrangements of trade which characterize the policy of this country'.[191]

The British Government did not accept the convention due to 'matters of form and diplomatic usage'.[192] Specifically, they did not agree with the suggested process for signing the convention. They did also note their dislike of the terms of the convention

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[183] The National Archives Privy Council, PC 1/2670 (1859)
[184] TNA, PC 1/4533 16 August 1851
[185] TNA, PC 1/2670 Article I Draft of a Convention for the Improvement of the System of Quarantine in the Mediterranean
[186] Ibid. Article III Draft of a Convention for the Improvement of the System of Quarantine in the Mediterranean
[187] The National Archives Foreign Office, FO 881/406 (1852), p.6
[188] The National Archives Foreign Office, FO 881/466 (1853), p.5
[189] Ibid. p.3
[190] Ibid. p.23
[191] Ibid. pp.23-4
[192] Ibid. p.11

stating that many measures would be 'impracticable in the United Kingdom'.[193] Thus, despite agreeing with some aspects of the proposed measures, the geo-political agendas prevented the ratification of draft conventions.

Although this ISC convention, like many of the others during the nineteenth century, was not unanimously accepted or formally ratified, the suggestions made to improve quarantine often materialised in Britain as sanitary measures. For example, the fumigation of ships and isolation of passengers were developed in public health bills rather than quarantine orders or regulations. Hardy demonstrates the close relationship between quarantine and sanitary measures in discussing 'a system of sanitary surveillance coupled with detailed preventive measures (isolation and disinfection)'.[194] Quarantine orders included both isolation and sanitary measures. An order on 25 August 1866 stated that 'anything infected with or that has been exposed to the infection of cholera, shall, as long as the ship is within such district or moor, place her in such position as from time to time the Nuisance Authority directs'.[195] In addition, the authority would visit, inspect and deal with vessels 'in like manner as nearly as may be as if the ship were a house within the district of such authority'.[196] Thus, the quarantine order included both isolation and public health orientated sanitary actions.

This makes it clear that the practice of quarantine was much more than just isolation and included sanitary measures, which were often influenced by discussions at ISCs. Thus, at least twenty years before the establishment of PSAs in 1872 sanitary measures were being used either in combination with or in addition to quarantine. Due to the nature of quarantine regulations the practice of quarantine was continually shifting. This meant that at times the line between public health sanitary measures and quarantine was blurred, because preventing the spread of disease using quarantine also meant incorporating sanitary measures.

2.3 Port Health and the Sanitary Act of 1866

The sanitary measures associated with public health were also constantly changing because of a government move to improve the nation's health, motivated by cholera epidemics (1832, 1848, 1854 and 1866) and the continued prevalence of typhoid. It meant that many changes took place in public health legislation and practice, including the introduction of PSAs in 1872. Hardy has argued that the cholera epidemics, in

[193] Ibid. p.25
[194] Hardy, 'Cholera' p.251
[195] TNA, CUST 149/1 Quarantine Order of 25 August 1866
[196] Ibid., Quarantine Order of 25 August 1866

particular that of 1866, initiated the move towards altering quarantine regulations, in turn leading to the introduction of the PSAs. She noted that government and health officials wanted to 'devise measures other than quarantine' to prevent the spread of disease albeit primarily for economic and political reasons.[197]

The raised profile of public health led Mr Henry Hervy Bruce (1820-1907), MP for Coleraine 1880-1885, to propose a new public health bill in June 1866 to amend the Nuisances Act and 'enable local authorities in rural districts, as well as in towns, to execute sewage and other works necessary for the public health'.[198] A suggestion that the bill be postponed forced Mr Bruce to state that if this happened the bill would be unlikely to return for discussion for another twelve months, in which time he believed 'the sacrifice of hundreds and perhaps thousands of lives would be the consequence'.[199] As a result discussions continued, particularly focusing on the timing of the bill as it had been raised so late in the parliamentary year. By the end of July discussions centred on particular clauses and in early August the bill was read in the House of Lords. The bill became the Sanitary Act, 1866. The following year Mr Charles Bowyer Adderley (1814-1905), MP for Staffordshire North, proposed the introduction of a consolidation bill, supported by Sir David Salomons (1797-1873), MP for Greenwich.[200]

The 1866 Act allowed the removal of infected travellers to local hospitals for treatment and for the fumigation of infected vessels.[201] As noted earlier, a quarantine order earlier that year dictated that ships were to be treated like houses within that district.[202] The Sanitary Act, 1866, section 31 developed these powers, stating

> Any ship or vessel lying in any river or other water shall be subject to the Jurisdiction of the Nuisance Authority of the District [...] and be within the Provisions of the Nuisances Removal Acts in the same Manner as if it were a House, [...] and the Master or Other Officer in charge of such ship shall be deemed for the Purposes of the Nuisances Removal Acts to be the Occupier of such ship or vessel; but this section shall not apply to any ship or vessel belonging to Her Majesty, or to any Foreign Government.[203]

Although considered 'an alternative approach', despite the earlier quarantine order noting similar regulations, Booker has noted that 'many in the medical profession [believed] that quarantine had re-established an unacceptable foothold'.[204]

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[197] Hardy, 'Cholera' p.251
[198] 184 *Hansard* 3 s, p.1377
[199] Ibid. pp.1376 – 78
[200] Ibid. p.1687. Mr Charles Bowyer was also President of the Board of Trade between 1874 and 1878.
[201] The Sanitary Act, 1866 (29 & 30 Vict. c. 90), Baldwin , and McDonald p.37
[202] TNA, CUST 149/1 Quarantine Order of 25 August 1866
[203] The Sanitary Act, 1866 clause 31
[204] Booker, p.538

There had been so much focus on public health, that in 1866 the Duke of Buckingham commented that

> The question of public health had received so much attention and had been so frequently the subject of legislation within the last few years, that it was quite unnecessary for him to enter into the reasons that had induced the late Government to bring in this measure[205]

Medical journals also reflected this move to improve health, at times with a specific focus on health on board ships. A *British Medical Journal* article on the 'Comparative Healthiness of sea-going ships' detailed the health of crews on different types of vessel, concluding that iron-clads were the healthiest, whilst gunboats were the least healthy.[206] They also discussed disease on board ships in relation to the Merchant Shipping Act, 1854, which stipulated that all merchant vessels had to carry specified medical stores, along with a copy of the Board of Trade's *Ship Captain's Medical Guide*.[207]

In 1872, when Parliament discussed the public health bill that proposed the introduction of PSAs attendance was low.[208] Only ten years before, public health had been high on the agenda and had stimulated wide debate, as indicated by the Duke of Buckingham's comment. In many ways, the proliferation of legislation in the wake of the cholera epidemics became in itself detrimental to public health in later years, as people no longer spent so much time discussing public health.

Baldwin, McDonald and Hardy have argued that when PSAs were introduced, they commanded increased powers compared to the various authorities, such as the Nuisance Removal Authorities and Poor Law Commissioners that they replaced.[209] Baldwin states PSAs were 'endowed with greater powers to act against communicable disease than their colleagues on shore'.[210] He went on to say that a year after the introduction of the PSAs in 1872

> Ships were required to undergo medical inspection, the sick [were] removed, the dead buried at sea, clothing, bedding and other articles disinfected or destroyed. Persons suffering suspicious symptoms could be detained up to two days, but once having undergone this regimen, the healthy were at liberty to disembark and the ship granted free practique.[211]

However, the duties shown above were already put in place in 1866 by a quarantine order and the Sanitary Act. It is important to understand that PSAs did not have increased powers over the authorities they replaced. In fact the Public Health Act,

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[205] 184 *Hansard* 3 s, pp.1679 – 1687
[206] 'Comparative Healthiness of Sea-going ships', *British Medical Journal* (1868)
[207] 'Disease on ship-board', *British Medical Journal* (1868), Merchant Shipping Act, 1854 (17 & 18 Vict. c.104). Up to date editions of the *Ship Captain's Medical Guide* are still issued today
[208] 212 *Parl. Deb.* 3 s, 5 April 1872, pp.861 – 2
[209] Baldwin ; Hardy, 'Cholera' and McDonald
[210] Baldwin p.152
[211] Ibid. p.152

1872, stated that PSAs shall 'exercise all or any powers under the Disease Prevention Act which the local authority is authorised to exercise within its jurisdiction'.[212] The only new details provided were on the organisation of the urban and rural sanitary authorities, which included the PSAs. PSAs were not established to exercise new powers; they were introduced for bureaucratic reasons.

2.4 Many to one: The consolidation of health authorities

Since the mid-nineteenth century there were claims from various groups of people, including the medical profession, that British public health legislation was confusing and chaotic. Before the Public Health Act, 1848, 'local initiative and central administrative growth created the patchwork, *ad hoc*, pragmatic, confusing structure from which a public health system finally emerged'.[213] However, there is evidence that the 1848 Act only 'constituted a tentative and uncertain start to government action'.[214]

The system was seen as inefficient because of duplication of work and the unclear nature of duties in legislation. The law was confusing as the Public Health Act, 1848, and the Local Government Act, 1858, created 'an intricate masse of law, and may be wholly or only in part adopted or not'.[215] Alongside these were the Nuisance Removal and Diseases Prevention Acts of 1849, 1855 and 1866, the Sewage Utilization Acts of 1865 and 1867, the Sanitary Loans Act, 1869, and a wealth of local by-laws that were 'sometimes in conflict with the general law of the land'.[216] Supporting this kind of appraisal, the *British Medical Journal* noted that the Public Health Department was 'anomalous and inconvenient', yet the 'interests of public health are nevertheless very vital to the nation, and [thus] the value of efficient supervision becomes yearly more apparent'.[217]

Professional health, local council and government officials continually complained of the unclear nature of public health legislation. In 1869, the Royal Sanitary Commission (RSC) was established to examine the sanitary laws.[218] In January 1871, the *British Medical Journal* reported the aim of the commission was 'to simplify and consolidate the local government of the country'.[219] In a letter to the Editor of the *British*

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[212] Public Health Act, 1872 (35 & 36 Vict c. 79)
[213] Fraser p.81
[214] Flinn, M. W., ed., *Edwin Chadwick's Report on the Sanitary Condition of the Labouring Population of great Britain*, Original Publication - London: Poor Law commission, 1842 edn (Edinburgh: Edinburgh Univeristy Press, 1965) p.73
[215] P.P. Vol. xxxv C.281 *Royal Sanitary Commission: second report, volume I* (1869) , p.21
[216] Ibid. p.21.
[217] 'Reconstitution of the Department of Public Health', *British Medical Journal*, vol. 1 (1867), p.513
[218] 'The Joint Committee and the Royal Sanitary Commission', *British Medical Journal* (1869), p.495
[219] 'The Forthcoming Report of the Royal Sanitary Commission', *British Medical Journal* (1871), p.15

Medical Journal, Mr Leonard Armstrong from South Shields fully supported the proposed examination of legislation, stating that

> Unless some investigation is made, and evidence taken, as to the competency of nuisance authorities as at present constituted, little benefit can result from the inquiries of the Commission. The consolidation of the Sanitary Acts can be of no practical use, if the parties who are entrusted with their application are too ignorant to comprehend their importance, or too much interested in vested abuses to enforce their provisions.[220]

The RSC confirmed the state of confusion and received a large variety of suggestions from medical officials from around the country.[221] Dr John Simon (1816-1904), the Chief Medical Officer for the LGB and Privy Council, suggested that further restrictions should be placed on 'infected persons frequenting public places' and all health authorities should have disinfecting apparatus.[222] Mr. Carr suggested increased disinfection powers, so local authorities could destroy infected clothes, to which Mr. Snowball agreed and proposed the addition of furniture to the list. Mr. Budd, however, commented that authorities in Bristol already had such powers, further demonstrating how practices varied regionally.[223]

The Commission's final report acknowledged the large number of suggestions and added that 'some are worthy of adoption'.[224] The report also noted that if the inquiry was for 'a new country without territorial division or Authorities, it would be necessary to settle the administrative areas before creating Authorities to have Jurisdiction within them'.[225] As this was not the case, and they were dealing with

> an old country possessing Authorities already too many and complex, the first consideration must be given to those which exist and to the question whether any of them appear to be such as can be intrusted with the execution of an amended law.[226]

The Commission made specific recommendations for quarantine in order to bring the arrangements 'into harmony with the future general sanitary administration'.[227] They suggested the implementation of quarantine only in cases of emergency such as the arrival of yellow fever during an unusually hot summer or the arrival of a vessel infected with some epidemic. Furthermore, they stated that 'the Naval Authorities and the Coastguard or Custom House Officials, should be bound to give information to the

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[220] 'The Royal Sanitary Commission', *British Medical Journal* (1869), p.574

[221] It could be considered that the use of medical officials to provide improvement suggestions for public health legislation was part of a dialogue between government (the RSC) and the public sphere (Medical Officers) in deterimining legislation. The concept that governments involved the public sphere to determine legislation is explored in relation to fog problems by Luckin in Sturdy, S., *Medicine, Health and the Public Sphere in Britain, 1600-2000*, xiii, 290 p : ill ; 25 cm. vols (Routledge: London, 2002) p.15

[222] *P.P. Vol. xxxv C.281* , p.48

[223] Ibid. p.48

[224] Ibid. p.48

[225] Ibid.

[226] Ibid. p.22

[227] Ibid.

nearest Local Authority in any case in which an examination or visit by the health officers might be desirable'.[228] They concluded that

> The Quarantine Act [1825] is a special sanitary measure enforced through the Privy Council. The Sanitary Act of 1866 adds to the conditions by which vessels come within its provision. In some places Harbour Authorities clash with local jurisdictions, adding the mischief of double government on the spot of divided responsibility between two central departments in London.[229]

They went on to state that

> Intricate legal responsibilities being attached to so many carious bodies, or to the same under different names, doubt often has been created as to where the responsibility of power lay, resulting either in inaction, litigation, or frustration of public works already attempted.[230]

In relation to shipping, the Commission declared that 'difficulties felt at Southampton prove the evils of the present multiplication of authorities and consequent uncertainty' and that in Newcastle 'a ship lying in mid-channel is considered under no sanitary authority'.[231] To rectify such problems it was recommended that ships situated in 'rivers, harbours, or any British waters should be subject, just as houses, to the Local Authorities of the district, and be liable to the regulations issued for the prevention of contagion, and equally entitled to medical aid'.[232] This was already in force under the Nuisance Removal and Disease Prevention Act, 1855, and the Sanitary Act, 1866.[233] For this to be implemented they advised that maritime town local authorities 'should have as full power over ships' crews, passengers, emigrants and all belonging to ships in the harbour for sanitary purposes as over the town population'.[234]

The overall conclusion of the Commission was that there was a clear need to consolidate and streamline the Public Health Acts. Sir Charles Bowyer Adderley presented these conclusions to the House of Commons in the form of a bill on 25 July 1871. In a report on the matter, the *British Medical Journal* noted

> The first part of his bill proposed to repeal all sanitary acts [...whilst] the second part of the bill divided the whole of the kingdom into sanitary districts, so that each should have its sanitary authority; and there would be no place without its sanitary authority, and only one such authority in every place.[235]

However, MPs believed there was too much in the proposed bill. Therefore, Mr James Stansfeld (1820-1898), MP for Halifax, took forward a bill to consolidate the public

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[228] Ibid. p.48
[229] Ibid. p.14
[230] Ibid. p.21
[231] Ibid. p.51
[232] The Sanitary Act, 1866, Nuisances Removal (England) Act, 1855 (18 & 19 Vict. c. 121)
[233] The Sanitary Act, 1866, Nuisances Removal (England) Act, 1855
[234] *P.P. Vol. xxxv C.281* , p.51
[235] 'Sanitary Legislation', *British Medical Journal* (1871), p.129

health authorities in February 1872, whilst a separate bill addressed improvements to the public health laws the following year.

After much debate, it was agreed that instead of the Nuisance Removal Authorities, Poor Law Commissioners, and other officials, there would be two main types of authority: Urban Sanitary Authorities and Rural Sanitary Authorities, whilst towns connected to ports and certain rivers would have Port Sanitary Authorities. These authorities would take on the responsibilities of all previous public health related acts for their particular sanitary area - urban, rural or port. The bill was passed in July 1872 as the Public Health Act, and the PSAs were established and operational by the following summer. The Act gave the authorities no new powers, only directing them to the previous acts, such as the Sanitary Act, 1866, that dictated all ships were to be treated in the same manner as houses.

Despite coming into force in 1872, medical journals reported that only a 'faint conception of the work' had been established, with no definite measures being put in place in preparation for an invasion of cholera.[236] They felt that responsibility for emergency work was still 'in the clouds', and water authorities were still considered to be responsible for the floating population on the River Thames.[237] In 1873, medical journals noted changes were taking place. *The Lancet* reminded readers that the purpose of the clause relating to port health was for 'uniting these fragmentary districts under one head'.[238] The same journal then summarised the changes that took place.

> The port sanitary authorities may be said in a legal sense to be newly constituted, although the powers given to them under the Public Health Act are chiefly an enlargement of those already possessed under the Disease Prevention Acts and other sanitary enactments.[239]

The introduction of PSAs in 1872 was a bureaucratic move towards simplifying public health legislation. PSAs received no new powers and were responsible for enforcing extant legislation relating to the health of passengers upon arrival in English ports.

2.5 Conclusion

A variety of social, political and international factors influenced the development of quarantine and the introduction of Port Sanitary Authorities. Quarantine in the nineteenth century was dictated by the Quarantine Act, 1825 and subsequent orders in council. These orders meant that quarantine practices could be altered without the passing of new

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[236] 'Medical Annotations', *The Lancet*, vol. 100 (1872), pp.161-168, p.164
[237] Ibid. p.165
[238] 'The Corporations of London and the Public Health Bill', *The Lancet* (1872), pp.164-165
[239] 'Sanitation Afloat', *The Lancet* (1873), pp.706-707

legislation. They contributed further to the already unclear legislation that, along with poor implementation, led to confusion and inconsistencies in the way quarantine was practised across Britain, something the British Government willingly acknowledged.

The problems caused by quarantine are illustrated through the complaints of traders and travellers who at times saw the practice as a farce. They incurred huge financial losses and delays at a time when the medical basis for the practice was being questioned. These factors ignited debates about the need for quarantine and were closely related to the ideas of contagion and anti-contagion which, as Ackerknecht and others have shown, were not solely medical ideas but were tied in with social and political influences.

The influence of social and political influences is highlighted most prominently at the International Sanitary Conferences. Although many conferences resulted in draft conventions, with some suggestions on how to prevent the spread of cholera, plague and yellow fever, many remained un-ratified because of diplomatic differences. The medical and particularly geopolitical background to each conference influenced not only the outcomes but also the nature of the discussions. Between 1825 and 1872, the practice of British quarantine changed from simple isolation to include sanitary measures influenced by suggestions made at the International Sanitary Conferences. These reflected the British approach to quarantine where orders in council regularly referred to duties for local public health authorities, for example disinfection of vessels and the removal of patients to local shore hospitals.

Alongside these changes in quarantine, there was a national movement to develop public health, which led to the introduction of a variety of Public Health Acts (1848, 1872 and 1875) as well as the Sanitary Act 1866. These Acts contained specific clauses intended to help prevent the spread of disease from ship to shore, including the fumigation of ships, clothing and bedding, and the removal of patients to local hospitals. Most significant was the decision to treat ships in the same manner as houses, as laid out in 1866, first in a quarantine order and then in the Sanitary Act, 1866. This Act was the beginnings of the responsibilities that later formed the Port Sanitary Authorities, and squarely placed quarantine within the realms of public health.

However, the various quarantine and public health legislation, including the treatment of ships as if they were houses, led to confusion. The Royal Sanitary Commission that took place in 1871 and 1872 acknowledged this problem and recommended that the authorities governing public health and the content of the law

required simplification. These suggestions culminated in the Public Health Acts of 1872 and 1875.

The creation of Port Sanitary Authorities in 1872 was part of a move to make public health legislation in Britain more systematic, with the simultaneous introduction of Urban and Rural Sanitary Authorities. Contrary to previous literature, the PSAs received no new powers; instead, they were directed to extant legislation for their duties. They were not a new method of disease prevention as the sanitary measures they employed had been used alongside quarantine for many years. This simplification was continued by the Public Health Act, 1875. The Public Health Act, 1872 was introduced to streamline the chaotic system of public health authorities. Therefore, Port Sanitary Authorities were introduced as part of a tidying up process, enforcing sanitary policies already in place, rather than introducing brand new measures for disease control.

Chapter 3: Quarantine 1872-1896: Health, politics and abolition

McDonald has argued that as early as 1860 'the stage was set for the abolition of quarantine and its replacement by this more enlightened system'.[240] The more enlightened system of Port Sanitary Authorities (PSAs) formally began in 1872 working alongside quarantine, which remained on the statute books until 1896. This joined up approach taken by England and Wales was known as the 'English System'. Historians have examined the history of quarantine between 1872 and 1896 from various perspectives, but there is no consensus on the use of quarantine or an explanation as to why the practice was abolished in 1896.[241]

Previous discussions on quarantine have provided differing views on the extent to which quarantine was used between 1872 and 1896. Maglen has argued that 'the role of quarantine remained prominent within the operation of port prophylaxis' and 'continued to be supported and maintained in port health well into the nineteenth century and indeed for over 20 years after the establishment of Port Sanitary Authorities'.[242] McDonald argues that quarantine use was 'obscure' and notes only one incident of quarantine in Britain after 1872.[243] This chapter shows that quarantine was used across the country after 1872 on more than one occasion, but that it was not a prominent part of port health measures between 1872 and 1896.

Few academics have explored the reasons for or commented on the timing of the abolition of the practice in 1896. Baldwin has remarked that 'the British did not abandon the protection of quarantine until they felt secure behind the bulwark of their hygienic reforms'.[244] However, this is a simplified argument and a number of other factors were involved. This chapter examines the English System between 1872 and the removal of quarantine in 1896, focusing on how quarantine was employed across England and Wales and the reasons for its abolition. As with development of quarantine and with the establishment of PSAs in 1872, the international scene, particularly the International Sanitary Conferences (ISCs), remained an important influence on quarantine at this time, specifically why it remained in practice until 1896.[245]

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[240] McDonald p.36

[241] Parts of this chapter have been presented to conferences and subsequently published in the following article Towner, K., 'Medicine and Politics: The Abolition of English Quarantine, 1872-1896 ', *International Journal of Maritime History* 19 (2008), pp. 211 - 224

[242] Maglen pp.427 - 8

[243] McDonald p.37

[244] Baldwin p.150

[245] Maglen p.427

3.1 Quarantine 1872-1896: Variations in practice

Quarantine was still used after the introduction of PSAs, with the two practices forming the English System.[246] The development of this system has been examined by Maglen and Hardy but such histories have not acknowledged that its implementation varied across the country according to local circumstances.[247] The degree of flexibility with which these practices were implemented even led some nineteenth-century contemporaries to question whether the English System was even a system at all due to the large variations that occurred across the country.[248]

McDonald has argued that when the PSAs were introduced 'almost everywhere the innovation was welcomed'.[249] However, *The Times* soon commented on their ineffectiveness when a vessel arrived at Gravesend with a patient experiencing smallpox. Having no isolation facilities at Gravesend, Customs officials allowed the vessel to continue up the river. *The Times* concluded that

> If the city authorities (who now alone have sanitary jurisdiction on the river) had their machinery in order this vessel would (or should) have been stopped at Gravesend, her sick removed, and her decks and cabins thoroughly fumigated in accordance with the directions given by the Medical Department of the Local Government Board.[250]

Even as late as 1894, a survey on port and riparian sanitary authorities reported that out of 60 PSAs only 41 had facilities to isolate ship-borne diseases, leaving 19 with none. In addition, 21 port authorities had made no provisions for disinfecting equipment showing that the system was not consistent.[251]

The inconsistencies appeared even more widely across the practice of quarantine. The *ad hoc* nature of quarantine can be explained by the low frequency of quarantineable diseases arriving after 1872, though no consensus has been reached on the extent to which quarantine was used at this time.[252] Official records of cases are rare, but there is evidence in reports and correspondence. As shown in chapter two, before 1872 the practice of quarantine was *ad hoc* and unclear due to ever-changing legislation. In 1878, the Chief Medical Officer for the Privy Council and Local Government Board (LGB), Dr Edward Cater Seaton (1815-1880) observed that the Quarantine Act, 1825 referred to 'infectious disease or distemper' but diseases such as scarlet fever and smallpox had

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[246] In reference to the English System see: Ibid. and Baldwin
[247] Maglen and Hardy, 'Cholera'
[248] See for example , 'The International Sanitary Conference', *The Practitioner*, vol. 13 (1874)
[249] McDonald p.38
[250] 'Small Pox not a quarantine disorder', *The Times*, 17 August 1872, p. 9 col. f
[251] P.P. Vol. LII C. 7812 *Reports and Papers on the Port and Riparian Sanitary Survey of England and Wales, 1893 - 94, with an Introduction by the MOH of the Local Government Board* (1895) pp.56-8
[252] See Maglen and McDonald

always 'been in practice exempt from quarantine, and dealt with under the general sanitary law of the kingdom', being at this time the PSAs.[253]

Mr W. D. Chester made similar remarks in 1884 noting that it had been 'many years since quarantine, except with regard to yellow fever, has been in operation in this Country'.[254] In reality, by 1872 quarantine only applied to cases of yellow fever because plague so rarely arrived at British ports. These cases, as dictated by the Quarantine Act, 1825 were to be quarantined at dedicated quarantine stations, which were specified areas where vessels were anchored for the period of their detention. There would often be an anchored hulk in the area with hospital supplies and watch facilities for Customs officials. By 1878, the Motherbank in the Solent was the only formal quarantine facility in Britain, compared to seven in 1825.[255] The problems the government faced with these quarantine stations and their eventual demise is discussed by Booker, in particular reference is made to the attempted reforms at Standgate Creek and Milford Haven made in 1826.[256]

The Motherbank is an area off the northeast coast of the Isle of Wight. When Chester surveyed the Motherbank in 1884, it consisted of two hulks: the S.S. *Menclaus* and S.S. *Edgar*. Despite the continuing and controversially high cost of maintaining the station, he proposed the S.S. *Menclaus* should become a dedicated floating hospital 'for the benefit of patients arriving in ships within either of the Ports of Southampton, Cowes or Portsmouth' and the S.S. *Edgar* should be a Watch vessel for Customs officials.[257]

With only one quarantine station in the country, this placed the south coast in a unique position. Only vessels arriving between Southampton and Sandwich were automatically subject to quarantine at the Motherbank.[258] Vessels arriving west of Southampton could be ordered to travel to the Solent to be quarantined.[259] In 1878 a yellow fever outbreak in the USA prompted the British Privy Council to request advice from the LGB on what should happen to a 'vessel arriving with cases of yellow fever on board, at Ports, too distant to be sent to the Motherbank'.[260] The LGB agreed that the cost

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[253] P.P. Vol. XXXVII Part II C.2130 - 1 *Seventh Annual Report of the LGB (1877 -78), Appendix no. 10 'Memorandum by the Medical Officer (originally prepared for the information of the Colonial Office) on the Systematic Action in Use in England to prevent the Importation of Infectious Disease'* (1879) p. 158

[254] The National Archives Privy Council, PC 8/319 (1884)

[255] The seven quarantine stations included Standgate Creek (London), Whitebooth Roads (Hull and Grimsby), Bromborough Pool, Milford Haven, the Motherbank (Portsmouth), St. Just's Pool (Falmouth), and King Road (Portshute Pill). Booker provides details of the staffing levels, salaries and provisions of the Motherbank at this time, pp. 539-42.

[256] Booker, pp. 453-7

[257] TNA, PC 8/319

[258] The National Archives Privy Council, PC 8/240 (1878)

[259] This included Weymouth, Dartmouth, Plymouth and Falmouth. Ibid.

[260] Ibid.

of establishing floating accommodation for yellow fever at all ports was too great, and 'it would be unreasonable to require vessels except those arriving at ports on the South Coast, to proceed to the Motherbank'.[261] Thus, it remained that only south-coast ports had access to formal quarantine facilities. Despite this decision, *The Times* noted in 1892 that the 'Privy Council are empowered to send [...any vessel with yellow fever on board to the Motherbank], whether the distance be 100 or 500 miles'.[262] However, no such incidents have been identified.

The frequency with which the Motherbank was used and quarantine was employed across Britain has remained a matter of debate. Maglen has argued that the arrival of the S.S. *Neva* at Southampton in 1889 with yellow fever on board was an isolated case, but that if other vessels had arrived with yellow fever or plague on board 'similar procedures would have been employed'.[263] However, other cases of quarantine have been reported. In response to a plea to abolish quarantine, Sir J. T. Hibbert reported that five ships had been quarantined at the Motherbank when they arrived with yellow fever.[264] Unfortunately, Hibbert provided no details on the vessels, or how long they were detained, but his statement does indicate the continued use of quarantine.

There are reports of at least three further incidents of quarantine between 1872 and 1896, each demonstrating the enforcement of quarantine at ports away from the south coast. The first case was the arrival of the S.S. *Prima* in 1878 at Tyne from Russia laden with rags. Due to the 'appearance of alleged plague' in remote provinces of Russia, the Shields Customs officials quarantined the vessel.[265] This shows that quarantine was used at ports across the country and that vessels were still being quarantined according to the last port they visited rather than disease outbreaks on board.

While undergoing quarantine the captain of the S.S. *Prima* obtained a second opinion from the Newcastle Collector of Customs (there is no explanation as to why the captain left the quarantined vessel). The Newcastle Customs official believed there was 'no order prohibiting such importations from the Baltic ports of Russia', and granted an order to land the cargo.[266] Upon returning to the vessel, the captain was informed by the Shields Collector of Customs that the vessel had to hoist the yellow flag with a black

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[261] Ibid.
[262] *The Times*, 17 September 1892, p.11 col. f
[263] Maglen p.426
[264] 1 in May 1889, 2 in April 1891, 1 in January 1892 and 1 in February 1892
Mr Gibson-Bowles (1841-1922), was MP for Kings Lynn between 1892 -1906, and in 1910.
Sir J. T. Hibbert (1824-1908), was MP for Oldham (1862-74, 1874-77, 1892-95) and Parliamentary Secretary to the Local Government Board (1872-74, 1880-83).
[265] 'Quarantine In The Tyne', *The Times*, 19 March 1879, p. 11 col. f
[266] Ibid.

circle, 'go out of the dock into the river, and undergo quarantine'.[267] The Shields Officer did add that it *might* be possible to land the cargo in an isolated spot for disinfection. The conflicting advice given by the two local custom officers demonstrates the continued confusion surrounding the implementation of quarantine after 1872 or indicates a lack of knowledge by some Customs officials.

The President of the LGB, Sir Charles Dilke (1843-1911), was aware of the confusion quarantine could cause, especially at the Motherbank. He raised concern in the House of Commons that the position of the Motherbank in the path of the main route to the port of Southampton, may lead ships to stop there without being told to do so. This would expose them to quarantined vessels and mean they would have to undergo quarantine themselves.[268] Chester reassured Dilke and the House of Commons that in 30 years 'only 5 masters of Ships have come to the Station under a misapprehension'.[269]

A case in Liverpool provides further evidence of regional variation. In 1891, the Liverpool Collector of Customs requested a relaxation of quarantine for the treatment of vessels from 'ports within longitude 35 & 60 [*sic*] west 84 & 40 [*sic*] south latitude'.[270] He proposed that

> Vessels having been at sea more than 20 days, and having had no sickness or death on board during their voyage, should be allowed to proceed direct to the entrance of the Dock [...] without being obliged first to bring to at the Quarantine Boarding Station in the river.[271]

They added that 'several gulf steamers have been placed at considerable inconvenience, risk, and delay'.[272] A draft minute dated 6 March 1891 agreed the suggestion but no official minute confirmed the proposal.[273]

The third incident is recorded in the 1897 LGB Annual Report. Dr William Collingridge (1854-1927), the MOH for the Port of London, reported the arrival of a vessel at the port of London during 1895/6.[274] The unnamed vessel arrived with three suspected cases of bubonic plague, but contrary to extant regulations the vessel was not

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[267] Ibid.
[268] TNA, PC 8/319 p.18
Charles Dilke was The President of the LGB (1882 – 1885), MP for Chelsea (1868 – 1885), and then MP for the Forest of Dean (1892 – 1911).
[269] Ibid. p.18
[270] The National Archives Privy Council, PC 8/ 422 (1891). This is an area at the bottom of South America including the Falkand Islands and small Antarctica islands, such as South Georgia.
[271] Ibid. The quarantine boarding station mentioned here is a place where Medical Officers of Health and Customs Officials could board, or remain next to, any vessel and ask the surgeon or captain questions to determine the health of the passengers and crew. This is different to a quarantine station such as the Motherbank.
[272] Ibid.
[273] Ibid.
[274] P.P. Vol. XXXVII C. 8584 *Twenty-Sixth Annual Report of the Local Government Board (1896 -97). Supplement containing the Report of the MO for 1896-97* (1897)

quarantined. Three patients died, one of whom had been removed to the Branch Seamen's Hospital, London.[275] The LGB report does not indicate whether the hospital received the other patients. Instead of quarantining the vessel Collingridge 'took steps to secure fumigation' of the crew before they departed on new vessels.[276] In addition, he buried the first body in a leaden coffin to prevent 'the access of rats or other animals'.[277] No explanation is given as to why the vessel was not quarantined, but it was noted that 'at the time of the occurrence of these cases, quarantine regulations were still in force in this country in respect of yellow fever and plague'.[278] Despite this, Collingridge believed that

> if these cases of plague originated in the way which I have indicated as affording the most probable explanation of facts [...] no system of quarantine, such as these regulations imposed, would have availed to prevent the importation of the disease into the country.[279]

This example demonstrates how PSAs were taking responsibility for 'quarantineable diseases' before the abolition of quarantine. Buchanan even noted that 'for many years with regard to the few remaining quarantineable diseases, the action necessary for the control of the infection was taken by the local sanitary authority, in this case the Port of London Sanitary Authority'.[280]

Various approaches to quarantine were implemented across Britain. At the Motherbank, there are at least five cases of quarantine recorded after 1872; it has not been possible to ascertain whether this figure included the S.S. *Neva*. In Tyne, quarantine took place amidst local confusion about the regulations, whilst a case in London illustrated how the local PSAs dealt with cases. Thus, both PSAs and quarantine were used to manage quarantineable diseases. There were differences between formal quarantine at the Motherbank and the *ad hoc* practice of quarantine elsewhere. Quarantine was used across Britain but the regulations governing the practice were unclear to both shipping companies and Customs officials.

3.2 The continuation of quarantine: Politics and trade

Few academics have considered in detail the reasons why quarantine remained in force until 1896 despite being not supported as a medical measure. Baldwin has argued that quarantine was not abolished until the country felt secure behind new sanitary reform

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[275] Ibid.p.135
[276] It was quarantine orders and the Sanitary Act, 1866 that had introduced measures such as fumigation.
[277] *P.P. Vol. XXXVII C. 8584* p.137
[278] Ibid. Appendix A No.12 p.137
[279] Ibid. Appendix A No.12 p.137
[280] Ibid. p.xvii – xx. Between 1861 and 1869, Buchanan acted as a temporary inspector for John Simon at the Privy Council.

measures, such as the PSAs. This section demonstrates that a variety of factors, including free trade and national and global politics were more influential in Britain maintaining quarantine until 1896.[281] During this period the ISCs did not influence the details of quarantine practice as they had done before 1872, but rather influenced the fact that quarantine remained in force alongside Britain's own port prophylactic measures, ensuring British registered vessels could travel across the world without delays, and retain an international influence via the ISCs.

3.2.1 National politics and trade

After 1872 complaints about quarantine continued to centre on the delays it caused to trade. In 1882, Charles Dilke noted the Foreign Office's displeasure about the quarantine procedures near Suez because they 'have of late caused enormous losses to British shipping'.[282] Similar complaints were a common feature in letters to the Editor of *The Times*. In 1891 J. M. Cunningham wrote that quarantine 'entails a most vexatious interference with trade and travellers, involving the loss of personal liberty and a most grievous waste of both time and money'.[283] The government importantly noted that British quarantine also worked in favour of the traders and travellers. In 1878 Seaton noted that British quarantine is 'relieving our maritime commerce from disabilities which would else be imposed upon it by other countries, in which quarantine is regarded as an essential part of their public health administration'.[284]

The cost of maintaining quarantine was often presented by MPs as a reason to abolish the practice. At a Treasury budget discussion in 1893, Gibson-Bowles, MP, 'objected to the item of £1,623 for quarantine expenses'.[285] In the House of Commons he argued that quarantine is 'one of the most indefensible abuses which existed in this country'.[286] This developed into a tirade against quarantine, claiming the Motherbank was run by 'moss-grown mariners who had nothing to do except keep the ships clean'.[287] He added that quarantine was useless because if yellow fever or plague were to arrive in Britain 'they would not come by the Motherbank, but by Dover or Calais boats which ran four, five or six times a day, and carried thousands of passengers'.[288] He believed that

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[281] These arguments have been published in Katrina Towner, "Medicine and Politics: The Abolition of English Quarantine, 1872-1896" *International Journal of Maritime History* June 2007 pp.211 - 224
[282] 'Dilke (Sir C. W.) On The Suez Canal Quarantine', *The Times*, 29 March 1882, p. 11 col. a
[283] 'Cunningham, J. M., On Quarantine', *The Times*, 28 August 1891, p. 5 col. f
[284] *P.P. Vol. XXXVII Part II C.2130 - 1* p.158.
[285] Parl. Deb. 4 s 714
[286] Ibid. 715
[287] Ibid. 715 - 6
[288] Ibid. 715 - 6

'nobody could defend such an outlay, or show that it had ever been of the slightest use'.[289] He was asked to raise the issue at the next session of parliament, which he duly did. In 1894, in a shorter speech, he argued that quarantine was 'the most ridiculous, oppressive, and expensive [system] that had ever been adopted in a civilised country'.[290]

Each time MPs, such as Gibson-Bowles, proposed the abolition of quarantine the response was that it could not happen without considering foreign nations. The Privy Council questioned the effectiveness of quarantine in 1879, arguing that the practice was in place 'merely to satisfy foreign governments so as to prevent shipping cleared from English ports being liable to detention under foreign quarantine'.[291] Another suggestion to abolish quarantine came from the Privy Council in 1884, to which they were informed that the Foreign Office, Board of Trade and Cabinet would need consulting 'as it [quarantine] involves international communications affecting our shipping'.[292]

When a further proposal was made to abolish quarantine in 1894, the Board of Trade informed the Treasury they 'had no affection for Quarantine which often causes delay and expense at foreign ports without keeping out disease'.[293] This response referred to international quarantine when the question was actually about abolishing national quarantine, perhaps indicating that even some government officials did not differentiate between national and international quarantine.

The Board of Trade added that the abolition of quarantine 'is a matter for the L. G. B'.[294] The Treasury, however, reported that the LGB 'attach no importance to the maintenance of this Service [quarantine] in the interests of Public Health, and it only remains to consider whether its abolition would injuriously affect our Trade with Foreign Countries'.[295] Both the Board of Trade and the LGB believed the other held overall responsibility for abolishing quarantine, further emphasising the confusing state of English quarantine. John Wodehouse (1826-1902), Foreign Secretary 1894 to 1895, also offered no objection 'on the grounds of Conventions with Foreign Powers, or of hindrance to our Foreign Trade'.[296]

Although quarantine was in place to prevent the spread of disease, its medical significance was only taken into consideration when the LGB briefly reported, with no explanation, that quarantine played no part in public health. The fate of quarantine, both

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[289] Ibid. 715 - 6
[290] 'Parliamentary Proceedings-Quarantine', *The Times*, 30 March 1894, p. 7 col. a
[291] TNA, PC 8/319
[292] Ibid. and The National Archives Privy Council, PC 8/326 (1884)
[293] The National Archives Board of Trade, MT 9/512 (1894)
[294] Ibid.
[295] Ibid.
[296] Ibid.

its continued use and its abolition, lay in the hands of politicians for trade and political reasons rather than for improvements in disease prevention. Even after the discussions in 1894 seemed to signal the end, quarantine remained in force until 1896.

3.2.2 Geopolitics and quarantine

As reported when government officials requested the abolition of quarantine, the main reason behind the continued use of quarantine was the influence of geopolitics. In relation to port health Maglen has acknowledged the influence of international politics. Additionally, Obijiofor Aginam has emphasised the influence of international politics on public health more widely, stating that the

> legacy of the nineteenth century public health diplomacy still inspires the reach and grasp of contemporary international law to regulate the globalization of emerging and re-emerging communicable diseases within the mandates of World Health Organisation (WHO) and other multilateral institutions.[297]

Before 1872, the ISCs not only ensured quarantine was maintained in Britain, as Maglen has acknowledged, but also influenced how quarantine was practised through the implementation of sanitary measures as shown in chapter two.[298] After 1872, when England introduced PSAs, the influence of the ISCs changed, becoming a significantly more political and economic influence. A *British Medical Journal* article reported that at the Royal Sanitary Commission (1871-1872) 'it was expressly stated that quarantine was simply a political and commercial expedient, intended to meet the prejudices of other foreign trading ports, and was not organised as to have any sanitary or preventive value for this country'.[299] They continued, bluntly reporting that for the Commission quarantine was 'a sham by which we must not allow ourselves to be blinded'.[300]

Emphasising the connection between British quarantine and international politics, Seaton noted in 1878 that quarantine 'is a function of the Privy Council Office, which, aided by the Board of Trade, deals with it as an international commercial question'.[301] Just as the ISCs influenced the development of quarantine before 1872, they were also fundamental to the reasons behind the continued use of the practice until 1896.

Between 1872 and 1896, five ISCs took place (1874 Vienna, 1881 Washington, 1885 Rome, 1892 Venice, and 1894 Paris). These conferences continued to result in non-ratified conventions, and in 1885

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[297] Aginam, O., 'International Law and Communicable Disease', *Bulletin of the World Health Organisation*, vol. 80 (2002) p.947
[298] Maglen p.427
[299] 'English Quarantine', *British Medical Journal*, vol. II (1872), p.268; also stated in *P.P. Vol. xxxv C.281* , p.48
[300] 'English Quarantine'
[301] *P.P. Vol. XXXVII Part II C.2130 - 1* p.158

> a German and a British medical journal were equally sceptical about the results of the conference, the former stating: "We do not promise ourselves the slightest result from such a conference" and the latter commenting: Unfortunately, the decisions of the conference [...] will really settle nothing.[302]

Harrison has noted that the need for international 'agreement over such issues as quarantine must be seen in the light of other considerations, within which they became increasingly intertwined, not least the desire to remove potential sources of tension between nations'.[303] Thus, it is important to consider these later conferences with the continuation and abolition of British quarantine in mind and the earlier conferences in relation to their influence on the working practices of quarantine.

At post-1872 ISCs, British delegates continued to argue against the need for quarantine. Harrison has noted that 'for Britain and France, the chief motives in seeking international agreement were of course related to their commercial and imperial interests'.[304] This begins to explain the continued use of quarantine, despite the establishment of PSAs in 1872.

The political and economic significance of Britain's continued attempts to reduce international quarantine are seen most clearly in relation to the Suez Canal and relations with Egypt. Britain had already raised concerns about quarantine and the Suez Canal before 1872, at the 1866 ISC. The Suez Canal remained important after 1872 both for Britain in protecting her interest as a colonial power and for Europe as a whole in preventing the importation of disease form the East. As Huber has noted

> The Suez Canal compromise highlighted the boundaries between science and diplomacy, nationalism and internationalism, and the West and the Orient. Most fundamentally, the idea was to create a gate between the Orient and the Occident which was open for commercial enterprises but closed for microbes and other suspicious elements.[305]

Concerns about the British Empire and protecting Europe continued and when reporting on the 1892 Venice ISC, *The Practitioner* noted that

> another effort is being made [...] to establish a code of regulations which shall afford Europe a reasonable protection against cholera imported from the East via the Suez Canal, provided this can be done without imposing unreasonable restrictions on the shipping which reaches the Mediterranean from the Red Sea.[306]

Although Egypt controlled the Suez Canal, it did not mean that it 'had any international function for the protection of Europe against disease'.[307] But, Egypt could close the canal to all infected vessels if they believed them to be a threat to Egyptian

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[302] Howard-Jones Part 3, p.381
[303] Harrison p.209
[304] Ibid. p.213
[305] Huber p.467
[306] 'The Venice International Sanitary Conference', *The Practitioner*, vol. 48 (1892), 144-147, p.144
[307] Ibid.

public health.[308] Britain was concerned that this may cause delay for many European traders. As *The Practitioner* noted, the 'Suez Canal is really the point where interest centres'.[309] It was eventually agreed that

> Great Britain, or any other country, can secure their shipping an unhindered passage of the Suez Canal, provided that, if any vessel be regarded as either suspect or infected, she shall not communicate with either shore of the Canal, and she shall sail only to a port of her own country. With a view of thus securing her isolation during the passage of the Canal, she is to be accompanied by guards, who will only leave her when she reaches the Mediterranean[310]

The French delegates, pathologists Dr P. Brouardel (1837-1906) and Proust observed this might be difficult because 'vessels cannot always return to home ports; stress of weather and other circumstances beyond control determining a different port of entry'.[311] But they argued 'the risk of imported infection [from Indian Ports] is trivial' and the alternative was that all infected and suspected vessels undergo some form of quarantine and disinfection upon arrival at Suez.[312]

Despite the proposed measures, there was still concern that the Egyptian Government could impose quarantine on vessels before they entered the Canal whenever disease threatened to spread to Egypt. One report noted that whatever was decided Egypt would have to administer the system 'and this would tend to the constitution of an authority having international powers'.[313] The ISC decided that this level of power should not be given to a single nation. As Egypt was already a politically sensitive area it was agreed that

> Consenting powers may definitely refuse to allow Egypt to assume the international function of acting as controlling sanitary authority for Europe [...] and Egypt may have to agree to allow the ships of those nations who do assent to the Agreement to pass through the Canal subject to the conditions embodied in it.[314]

In fact, this was already happening for some 'infected' British vessels that were allowed to pass through the canal in quarantine with no further restrictions.

These debates, and others relating to the Ottoman Empire, Russia and European territorial gains in these areas, meant discussions on quarantine and preventing the spread of disease were always conducted with an undertone of international tension and distrust.[315] Tension between Britain and Egypt in relation to the Suez Canal had arisen previously. In 1882, Charles Dilke noted that the Foreign Office could 'no longer consent

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[308] Ibid.
[309] Ibid. p.145
[310] Ibid.
[311] Ibid. p.146
[312] Ibid.
[313] Ibid. p.147
[314] Ibid.
[315] Harrison has recently explored these tensions in relation to the origins of the ISCs and international approaches to disease prevention. See Harrison

that an irresponsible body should have the power of making unreasonable laws which disturb the whole Eastern trade of Great Britain and uselessly impede her communications with India'.[316] It was also observed that as 'the Egyptian government is largely represented upon the [International Sanitary] Board Her Majesty's Government must look to that of the Khedive to take the initiative in remedying the present state of affairs'.[317] Later that year British Forces entered and occupied Egypt, to protect British interests in the Suez Canal as a trade link between Britain and India. Britain did not trust Egypt *not* to impose additional quarantine measures on vessels passing through the Suez Canal, which could lead to delays and disrupt trade with India. Harrison has noted that 'quarantine measures at Suez affected Britain disproportionately'.[318]

The use of quarantine for political gain was not a new concept. The Levant (the eastern shores of the Mediterranean including the Ottoman Empire) was often on the receiving end of such schemes. According to McDonald, similar measures dated back to 1751 when 'all ships from the Levant, not possessing clean bills of health were obliged to do quarantine at Malta'.[319] More recently, Harrison cited Dr John Bowring's claim that

> there was no doubt that political objects were sought for in the maintenance of quarantine in the east; and it was equally certain that political interests were promoted by them, and that these, and not the health of nations, were the principal motives for the great severity with which the regulations were enforced abroad.[320]

For Bowring, his concern was that Russia's quarantine officials 'were merely "political functionaries" that "arrested and released travellers at will [...] in the name of public health"'.[321] Similar concerns emerged in the 1850s when attempts were made at the ISCs to impose more stringent quarantine measures on the Ottoman Empire and other countries close to the Levant.[322]

After 1872, Britain and other ISC delegates continued to use similar tactics when imposing quarantine on the Ottoman Empire and Russia. In 1874 a Turkish delegate requested that 'a penal law against sanitary offences might be promulgated in the Ottoman Empire'.[323] At the 1874 ISC in Vienna it was suggested that ships arriving from infected ports in 'the Eastern states of Europe could be quarantined for up to ten days'.[324]

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[316] *The Times*, 29 March 1882, p.11 col. a
[317] Ibid.
[318] Harrison p.216
[319] McDonald p.23
[320] Harrison p.214
[321] Ibid. pp.214-5,
[322] TNA, PC 1/4533 Letter dated 1 Sept 1851, and TNA, PC 1/2670 (Article X)
[323] P.P. Vol. XL C. 1318 *Second Annual Report of the Local Government Board (1874) with Appendix* (1875) p.216
[324] P.P. Vol. XL C. 1318 *Second Annual Report of the Local Government Board (1874) with Appendix: Abstract by Dr. Seaton of Proceedings of the International Sanitary Conference held at Vienna, July 1 to August 1 1874* (1875) pp.215 - 6

The duration of quarantine for vessels from other states was between one and seven days, a period that was reduced to one day of observation if the voyage had lasted more than seven days.[325]

Although there was opposition to quarantine across Britain, the government had to maintain the practice so that British vessels could avoid quarantine at foreign ports. In addition, without a quarantine system of its own Britain would not have been in a position to influence quarantine internationally. To get round this dilemma, in 1878 the Privy Council agreed that 'it may well be expedient for international purposes to keep up the appearance at least of a system essential by some foreign governments'.[326] It was therefore possible for Britain to 'prevent the imposition of quarantine in foreign countries'.[327] By the late 1880s, Austria, still part of the Austro-Hungarian Empire, shared the British approach. *The Times* noted that Austria only maintained quarantine 'on purely commercial grounds, in order to assure Austrian vessels admission into the ports of those countries that still believe in quarantine'.[328]

Britain was able to protect public health using methods they wished to impose, such as medical inspection and the work of the PSAs. This in turn allowed merchants and travellers to move freely across the world while still being safeguarded from disease in countries whose sanitary standards were questionable. For countries with poor sanitary records, and where political or territorial gains were considered a threat, stricter quarantines could be, and were, imposed via ISCs. Thus Britain was protected politically and medically.

While international politics played a key role in the continued use of quarantine, these discussions only briefly mentioned the medical relevance or importance of quarantine as a health protection measure. By keeping up the appearance of a quarantine system, and implementing the English system, Britain got the best of both worlds: the free movement of shipping, continued communications with the British Empire and national protection from infectious diseases through less intrusive port prophylactic measures, whilst still maintaining its influence on quarantine internationally.

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[325] Ibid. p.215
[326] The National Archives Privy Council, PC 8/241 (1878)
[327] TNA, PC 8/319
[328] 'Quarantine Question', *The Times*, 05 October 1887, p. 12 col. d

3.3. The abolition of quarantine and medicine

It has been shown that the continued use of quarantine was predominantly due to international politics. However, medicine did play a role in the development and eventual abolition of quarantine, even if it was only a small one.

The origin of medical information dictating quarantine restrictions abroad was a concern for traders. They did not always trust non-British medical experts for two reasons. First, they did not trust their expertise and second, it was sometimes believed political issues motivated them. At a government deputation with Lord Derby, in 1876, ship owners complained that 'doctors of no standing [...] would report an outbreak of fever at a place miles away, and all the ports in the Red Sea were put into quarantine'.[329] In 1876 Gray, Dawes, and Co. also raised similar concerns.[330]

There were sometimes conflicting opinions between foreign medical experts and those employed by shipping companies. In 1875 and 1876, Gray, Dawes, and Co. claimed their own medical staff had stated that alleged cases of plague were actually marsh fever and therefore quarantine restrictions should be removed.[331] They referred to the claims as 'sensational intelligence received from foreign sources' and argued that

> exaggerated reports have been promulgated for the purpose of deterring steamers from visiting the Red Sea ports, and preventing the growth of British trade in Southern Persia and Turkey in Asia.[332]

The following year the company felt that quarantine continued to be used in an underhand manner to delay British vessels. They claimed that

> British steamships trading in the Red Sea and Persian Gulf ports have been subjected to lengthened quarantine upon frivolous grounds, and that there were good reasons for believing that the Egyptian Government had made use of the quarantine regulations to drive British steamers out of the trade.[333]

Despite these allegations, British Government sources argued otherwise and quarantine restrictions remained. Obviously shipping companies would push for reduced restrictions, so it is difficult to know how genuine their claims were.

For traders it was important that medical professionals made, or at least influenced, the decisions about quarantine restrictions. However, Britain's quarantine system was the responsibility of the Privy Council. Neither the Privy Council nor the

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[329] 'Quarantine, Deputation to Government About', *The Times*, 20 March 1876, p. 12 col. a

[330] 'Gray And Dawes On Plague And Quarantine'Ibid., 03 June 1876, p. 9 col. c, *The Times*, 07 June 1876, p.5 col. f, *The Times*, 20 March 1876, p.12 col. a , *The Times*, 22 June 1876, p.6 col. f, *The Times*, 10 June 1876, p.13 col. b

[331] *The Times*, 03 June 1876, p.9 col. c, *The Times*, 07 June 1876, p.5 col. f, *The Times*, 20 March 1876, p.12 col. a , *The Times*, 22 June 1876, p.6 col. f, *The Times*, 10 June 1876, p.13 col. b, *The Times*, 20 April 1875, p.6 col. e

[332] *The Times*, 07 June 1876, p.5 col. f

[333] *The Times*, 20 April 1875, p.6 col. e

Board of Trade had any medical standing. The medical department of the LGB, specifically the Chief Medical Officer for the LGB and Privy Council, had responsibility for public health and PSAs but not quarantine.

Customs officials, who had no medical training, were responsible for identifying cases of yellow fever or plague via quarantine questions and detaining vessels accordingly. This had been a concern for many years. In ports or harbours with no Customs Officers the local Coastguard would take on this responsibility, again with no medical training. It is possible that the involvement of the Coastguard caused further inconsistencies and variations. The Coastguard was generally responsible for smaller harbours such as Hythe, Hamble and Warsash in the Southampton area and reports on quarantine at these and similar places have not been found. There may be two reasons for this. Firstly, vessels arriving at Hamble and Warsash may have passed the Motherbank so records of quarantine were included in the records of the Motherbank. Secondly, many of these smaller harbours are most likely to have received only coastal vessels.

The effectiveness of quarantine in preventing the spread of disease, an issue originally discussed by Dr Sutherland in 1852, was raised again in 1884. A Privy Council memorandum noted that 'the retention of quarantine [...] appears to be not only unnecessary but dangerous'.[334] In 1893, Gibson-Bowles, MP, told the House of Commons 'quarantine was not only useless, but it was positively mischievous and dangerous'.[335] The concern was that once passengers were confined with patients the disease would spread.

Individuals had raised similar concerns when abroad. In 1874, it was noted that as there was no lazaretto in Madeira 'quarantine is performed by ships in an open roadstead, which at times is extremely dangerous, and from which vessels must put out to sea in the worst weather to avoid being dashed to places on a rocky shore'.[336] In Marseilles, C. J. Brooke noted in 1883 that

> Ships put in quarantine harbour are wedged in one close alongside the other, so that whatever poison one contains must fly to another, and some come which have cargoes on board from the infected country as well as passengers. These are put alongside other ships that have only passed through, so that every vessel to the time of receiving practique or discharge must be equally infected.[337]

This indicates that Brooke was an advocate of contagion theory. However, in general, the developing ideas of contagion rarely emerged in discussions about quarantine. As noted

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[334] TNA, PC 8/319 pp.7-8 of memorandum.
[335] Parl. Deb. 4 s 714-5
[336] *The Times*, 18 February 1874, p.5 col. c
[337] *The Times*, 11 October 1883, p.6 col. d

in chapter two, these ideas were discussed in relation to cholera at the ISCs but not back in Britain where cholera was not a quarantineable disease.

The lack of support for quarantine is evident in numerous political and medical sources stating the practice had nothing to do with sanitary matters. The LGB maintained that 'in no case had quarantine been resorted to in England as a sanitary measure'.[338] In 1884, notes from the Privy Council state that 'as regards this disease [yellow fever] the purpose of quarantine appears therefore to be political rather than medical'.[339] Even across the Atlantic, S. Oakley Vonderpoel noted in 1884 that quarantine was 'useless in a sanitary point of view'.[340] Mr Shaw Leferve (1831-1928), MP for Reading 1863 to 1885, commented 'there did not appear to be any necessity for maintaining the old quarantine laws so far as our own safety was concerned'.[341]

The Privy Council, along with government departments, continued to argue that if quarantine was used 'for sanitary purposes [it] would not only be found impracticable, but that it will very seriously hinder other measures being taken for preventing the introduction of infection'.[342] Taking this one step further, J. M. Cunningham in 1891 argued that quarantine 'failed to protect Europe and other places from cholera' and 'does more than anything else to retard those sanitary improvements which are the only protection against cholera and other diseases on which the small reliance is placed'.[343]

Despite Baldwin's claim that Britain maintained quarantine until it felt safe behind new sanitary reforms, the evidence above indicates that quarantine was seen as an unreliable method for protecting the country from infectious disease. For much of the country quarantine did not apply and PSAs were the only measure used to protect ports from disease as the only quarantine station was on the south coast. Thus, most of England was protected sufficiently by PSAs twenty-two years before the abolition of quarantine. Between 1872 and 1896 quarantine was very rarely used; seven cases were reported, five at the Motherbank and two elsewhere. Nevertheless, this supports Maglen's argument that quarantine was still used. More importantly, it shows that quarantine was not central in protecting Britain because the country was already secure behind the bulwark of PSAs.

One reason for the low number of quarantine cases could simply be that very few ships arrived with yellow fever or plague. In addition, other measures were in place to

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[338] TNA, PC 8/319
[339] Ibid. pp.2-3
[340] 'Scientific Value' p. 23
[341] *The Times*, 30 March 1894, p.7 col. a
[342] TNA, PC 8/319
[343] *The Times*, 28 August 1891, p.5 col. f

deal with 'quarantineable diseases'. For example, before the introduction of PSAs, an 1866 quarantine order stated that after three days of quarantine patients could be moved to local isolation facilities (floating or on shore) and the vessel disinfected, rather than undergo long periods of quarantine.[344] Chester commented in August 1884 that 'so far as any risk to this country is concerned it would be better that Sanitary Authorities should deal with these diseases [plague and yellow fever] as well as with others'.[345] In 1893, the Southampton MOH made the same point, remarking in his annual report that 'surely, if we can prevent Cholera from gaining a footing in the country without Quarantine, Yellow Fever and Plague might be dealt with in a similar manner efficiently'.[346] So whilst not necessarily being needed because of the lack of disease, it is also clear that other methods could be used.

In debates about the abolition of quarantine, people attached very little medical importance to the practice. Quarantine was rarely used, and was perceived to be a hindrance to other sanitary measures such as medical inspection. At times, people considered it dangerous. Quarantine was not managed by a medical department or medical personnel, but by Customs Officers or the Coastguard. Medically, quarantine played a minor role in preventing the spread of disease from ship to shore in Britain after 1872 and as such medical factors had little influence in its eventual abolition.

3.4. The abolition of quarantine

Despite the large volume of detailed research that has been published on the eighteenth and nineteenth-century Quarantine Acts, the Act that finally abolished the practice has been given very little consideration.[347]

The Public Health Act, 1896 abolished quarantine while the Public Health (Ports) Act, 1896 facilitated 'the action that had to be taken when a ship, on coming into port, was reported by the Medical Officer to be in an insanitary condition'.[348] At the time, MPs believed the Ports Act 'would practically put a ship in the same position, as regarded treatment of this kind, as a house'. What these MPs failed to notice was that this concept was already introduced by the Sanitary Act of 1866.[349]

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[344] The National Archives Board of Customs: Quarantine Orders and Detentions, CUST 149/1 (1825 - 1875)
[345] TNA, PC 8/319
[346] Harris, A. W., *Second Southampton Port Sanitary Authority Report for the year ended 31st December 1893, part of Annual Report on the health of Southampton* (Southampton: 1894) p.27
[347] See for example McDonald p.43
[348] 43 Parl. Deb. 4 s 118
[349] Ibid. and The Sanitary Act, 1866

Current port health literature has failed to acknowledge that although these acts abolished quarantine, the situation was not that clear cut. Neither Act removed the power to detain vessels. The first section of the Public Health Act, 1896 stated that the LGB could allow Customs Officers, Coastguards or any other authority to execute and enforce the following regulations

> (a) the signals to be hoisted by vessels having any case of epidemic, endemic, or infectious disease on board; and
>
> (b) the questions to be answered by masters, pilots, and other persons on board any vessel as to cases of such disease on board during the voyage or on the arrival of the vessel; and
>
> (c) the detention of vessels and of persons on board vessel; and
>
> (d) the duties to be performed in cases of such disease by masters, pilots, and other persons on board vessels.[350]

In effect, the practical system in place to prevent the spread of infectious diseases from ship to shore did not change. There were only two significant differences. Firstly, the LGB was now solely responsible for controlling port health regulations rather than the previous combination of Privy Council, Board of Trade and the LGB. Secondly, as the 1896 LGB Annual Report noted, a person suffering from yellow fever, plague or cholera could 'be removed, if his condition admit of it, to the hospital or other suitable place appointed for that purpose by the Sanitary Authority', something some ports had already started to enforce.[351] As formal quarantine facilities were only available on the south coast at the Motherbank, local authorities, be it PSAs, Customs Officials or the Coastguard, were already responsible for quarantineable diseases. In relation to the arrival of plague cases in London, the local MOH noted that

> As had been the case for many years with regard to the few remaining quarantineable diseases, the action necessary to the control of the infection was taken by the local sanitary authority, in this case the Port of London Sanitary Authority.[352]

At Ryde, on the Isle of Wight, the authorities 'had made full provision ashore for the reception of patients removed from on board ships'.[353] All vessels quarantined at the Motherbank had patients, often suffering from yellow fever, removed to the hospital ship the S.S. *Menclaus* for treatment whilst the vessel was disinfected.[354] In London, patients arriving with suspected cases of plague were removed to a local isolation hospital on shore.[355] Thus, before the establishment of the Public Health Act, 1896 the sanitary

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[350] Public Health Act, 1896 (59 & 60 Vict. c. 19)
[351] *P.P. Vol. XXXVII C. 8584* Appendix A, No. 13, p.142
[352] Ibid. pp.xvii - xx
[353] TNA, PC 8/319 p.10
[354] Ibid.p.11
[355] *P.P. Vol. XXXVII C. 8584* p.137

measure of removing patients to local isolation hospitals for treatment was already well established across the country. Therefore, although it has already been acknowledged that the Public Health Act, 1896 removed quarantine, it in fact only formalised the port health practices that were already in place.

The Public Health Act, 1896, abolished quarantine and all regulations referring to quarantine, yet medical inspection, isolation of the sick and the power to detain vessels remained part of port health regulations. The abolition of quarantine and all references to quarantine was a bureaucratic move in the same way that maintaining the appearance of quarantine was a bureaucratic move to enable trade and political relations to run smoothly. Even after quarantine was abolished, isolation continued to be used as part of port health but not in the name of quarantine. Port health was continually evolving and the removal of the word quarantine from legislation was just another of these steps.

3.6. Conclusion

This chapter has examined how quarantine was employed between 1872 and 1896, and the reasons for its maintenance and eventual abolition. It has also examined the concept and various meanings of quarantine up to and beyond 1896. It has shown that quarantine was not consistently practised across England and Wales and, because of this, the English System was barely a system at all. With the Motherbank being the only quarantine station available after 1878, other ports had to adopt an *ad hoc* approach when quarantine was implemented. It has been shown that, contrary to previous arguments, quarantine did take place on a few occasions after 1872. More importantly, it has been argued that during this period Port Sanitary Authorities were already managing and treating quarantineable diseases that arrived in their ports without resorting to quarantine.

The cost of maintaining quarantine was often cited by MPs as a reason to abolish the practice, with the standard response being that quarantine could not be abolished without considering whether it would injuriously affect trade abroad and therefore required consultation with the Local Government Board, Board of Trade, Privy Council, Foreign Office and the Cabinet. The continued use of quarantine played a role in international politics. Firstly, if quarantine did not exist in England and Wales, British vessels would have been quarantined abroad for longer periods, which would have hindered trade and communications. Secondly, by maintaining an appearance of quarantine, Britain was also able to influence the quarantine periods imposed on other countries often for political and territorial reasons rather than a sound medical argument.

This ensured Britain was protecting her trade interests and empire against threats from other nations, whilst adopting less intrusive port prophylactic measures at home.

Medicine played a small role in the development of quarantine. Quarantine was overseen by a government department with no medical expertise. Ideas of contagion and disease did not strongly influence any decisions on the maintenance or abolition of the practice. The only medical comment that reappeared was that by isolating ships full of people, quarantine was responsible for increasing the level of exposure to a disease, rather than reducing it. Yet, even this did not incline policy makers to abolish the practice.

Political factors were at the heart of the continued use of quarantine, with its medical background being only a minor influence in the practice's abolition. As acknowledged in port health histories, quarantine was formally taken off the statute books in 1896. Yet evidence from the Public Health Act, 1896 and subsequent port health practices illustrate that the quarantine methods, such as the isolation of the sick and detention of vessels for disinfection, were formally transferred to the PSAs as part of their duties to prevent the spread of disease from ship to shore.

These first two chapters have illustrated how the introduction of Port Sanitary Authorities and the abolition of quarantine were influenced by not only national politics ideas, but also international politics. Additionally, it has been shown that the concept of quarantine in England and Wales was continually changing. It was a political move to first maintain and then to abolish the practice in 1896. Thus, politics had a very strong hold over a medical practice originally implemented to prevent the spread of disease from ship to shore.

Chapter 4: Port health in practice: Southampton

Konvitz has argued that 'the relationship between ports and cities readily lends itself to contrasts. Ships suggest mobility; cities, the fixed and immobile structures of civilization. Ships disperse goods and people; cities concentrate them'.[356] In relation to Liverpool, Milne has recently emphasised the importance of studying the port and the town as one. He argues that

> The maritime history of Liverpool has usually been written separately from its urban history, and the port and the city tend to appear in different books. Given the importance of the maritime past, we should make some effort to study the 'port city', rather than just the 'port' or the 'city'.[357]

This similarly applies to public health histories. Histories of public health have examined town health and port health separately. The primary concern of both public and port health authorities was the protection of health and prevention of the spread of disease. By studying port health and public health in Southampton together this work begins to provide a clearer picture of the interactions between health authorities in port towns. There is a need to develop this further and consider in detail the work of public and port health authorities more widely from a port town perspective, rather than just through the port health perspective that is adopted here, but this is outside the scope of this research. By studying the inter-relations between port health and public health in Southampton, this work begins to develop a better understanding of the interactions between health authorities in port towns.

Firstly, it will be necessary to place port health in context. This chapter will introduce the risks the port posed to the town in terms of importation of disease. Due to the *ad hoc* introduction of Port Sanitary Authorities (PSA), it will also look at how and when Southampton's PSA was established. An examination of circulars issued centrally by the Local Government Board (LGB) will map out the duties and work of the PSA that was regularly amended in the same way as quarantine regulations. It will be shown that Southampton employed local measures to prevent the spread of diseases such as smallpox that were not covered by national legislation. The second part of this chapter investigates how the PSA worked with other health facilities in the town to mitigate the risks facing the port town. This includes a survey of the wide range of voluntary, civilian and military hospitals available to the town and port and their admission policies that were adapted to accommodate patients from the port. It is then possible to explore how

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[356] Konvitz, J. W., 'The Crises of Atlantic Port Cities, 1880 to 1920', *Comparative Studies in Society and History*, vol. 36 (1994), April 1994 pp.295-6

[357] Milne, G., 'Maritime Liverpool', in *Liverpool 800: Culture, character and history*, ed. by Belchem, J. (Liverpool: Liverpool University Press, 2006) pp. 257-309 p.257

the PSA used these facilities to resolve accommodation problems. Finally, this chapter will demonstrate how Southampton's port and town health authorities pooled resources with neighbouring authorities. These fluid boundaries led to improved outcomes in the fight to prevent the spread of disease. To explore the working practices of Southampton's PSA and the relations it forged, it is first necessary to introduce the port of Southampton and discuss the risks the port posed to the town's health.

4.1. The Port of Southampton

The port of Southampton developed rapidly during the nineteenth century.[358] Situated on the centre of the south coast the port had been important since medieval times because of three key geographic features. Firstly, the Isle of Wight protected the Solent and Southampton Water from the heavy seas of the English Channel and the port from storms.[359] Secondly, naturally deep waters allowed access for some of the world's largest vessels during the nineteenth century. Finally, a double high tide, due to the position of the Isle of Wight, ensured seventeen hours a day of unrestricted access to the port.[360]

By the 1840s, Southampton was starting 'a new phase, but one in which port activity was to come to the fore'.[361] Sarah Palmer notes that the 'opening of the London and South-Western Railway [in 1840], shortly followed by the first dock, was to form the basis of a passenger business bringing Southampton to the position of fifth port in the country within twenty years'.[362] By the mid-1880s, the novelist W. C. Russell (1844-1911) described Southampton docks as 'prosperous enough at the present time'.[363] Russell believed there was nothing 'against the possibilities of the future [that would] in the least degree damp or hinder the enthusiastic faith of the many among her population in her coming greatness as a port'.[364]

The increasingly important port was capable of receiving more and bigger ships, meaning the arrival and departure of more people. In 1884, Russell described the departure of the S.S *Minho* where 'a crowd of passengers stood aft, waving hats and handkerchiefs to groups of friends in the docks'.[365] After describing the workings of the

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[358] Pay, S., *Medieval Southampton: A Guide to the Exhibition* (Southampton: Southampton City Museums and Art Gallery)
[359] Tavener, L. E., 'The Port of Southampton', *Economic Geography*, vol. 26 (1950), 260-273, p.263
[360] Hendy, A., *History and Development of the Port of Southampton* (Winchester: Adam Hendy, 2000) p.1 and , *Port of Southampton Handbook* (Southampton: Charter, 1989) p.4
[361] Palmer p.142
[362] Ibid. p.142
[363] Russell, W. C., *English Channel Ports and the Estate of the East and North India Dock Company* (London: Simpson Law, 1884) p.44
[364] Ibid. p.44
[365] Ibid. p.34

docks, Russell remarked 'I arrived at this place quite unprepared to witness the busy and flourishing scene the docks offered'.[366] The people and ships creating this hustle and bustle determined the work of the PSA. During the nineteenth century, the docks underwent extensive improvement programmes, including the inauguration of the Empress Dock and Itchen Quays in 1890, significantly increasing the port's capacity. This in turn, assisted the development of Southampton into one of the busiest passenger ports in Britain, and thereby increased the work of the PSA.[367]

Palmer has defined port towns and cities as 'towns and cities which were also ports [...] and those centres (Liverpool, Cardiff, Southampton, Hull, Plymouth) which were port towns or cities in the sense that this dimension was central'.[368] The central role the port played in the town includes the economic, social and medical impact of the port. As Konvitz notes, 'the port extends inland along roads and rail lines seldom used by sailors; [and likewise ...] the city, in the form of channels, piloting services and navigational aids, reaches out to sea'.[369]

Lawton and Lee have argued that 'port-cities reflected an increased risk of exposure, particularly to infectious disease. They were often vulnerable to ship-borne infections'.[370] In particular, 'the development of steam ships may well have increased initially the risk of epidemic infection'.[371] Dr A. Wellesley Harris, the local Medical Officer of Health (MOH) and Port Medical Officer (PMO), acknowledged this risk in Southampton. He regularly remarked on the importance of preventing epidemic diseases, noting in 1894 that 'the Health Authority have carried out many sanitary improvements [in the last year], including a number of measures for protecting the public from the danger of epidemic disease'.[372]

Brayshay and Pointon have illustrated the threat ports posed to port towns with the case study of the S.S. *Cadet*, a convict ship that docked in Plymouth with cholera in 1848.[373] In November 1897, there was an outbreak of five cases of smallpox in Southampton demonstrates the same danger. The first patient was an engineer from

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[366] Ibid. p.38

[367] For example, by 1936 the port dealt with 46% of Britain's ocean-going passenger traffic. Port Cities, *Gateway to the World: The premier port*, <http://www.plimsoll.org/LifeOfAPort/ComesToLife/GatewayToTheWorld/default.asp>. [accessed 26 March 2008]

[368] Palmer p.139

[369] Konvitz pp. 295-6

[370] Lawton and Lee, eds. p.6

[371] Falliner, H., 'Zur Historischen Entwicklung des Bremischen Quarantanedienstes', *Bremer Aerzblatt* (1978), 36-50 in Lawton and Lee, eds. p.6

[372] Harris, A. W., *Twenty-First Annual Report on the Vital Statistics and Sanitary Condition of the Borough and Port of Southampton for the year end 1894* (Southampton: Southampton Urban Sanitary Authority, 1895), p.ix

[373] Brayshay and Pointon p.171

S.S. *Thames* who arrived at Southampton in good health and returned to his lodgings in Guillaume Terrace. Once diagnosed with smallpox he was isolated on the hospital ship S.S. *Alliance*, his premises disinfected and members of his household re-vaccinated.[374] The next two patients were directly linked to the engineer. One was a young girl who had visited the premises before the engineer became ill and the second, 'A. McH', was a member of the engineer's household at Guillaume Terrace.[375] The fourth patient was a sailor from the same ship who landed 'feeling unwell, and having several spots'.[376] Upon visiting a doctor that evening, the sailor was diagnosed with smallpox. The sailor's landing went against local port health regulations as Southampton had put in place local regulations regarding the notification of smallpox in 1893. Before this, the notification of smallpox was a confusing issue because it was not a quarantineable disease nor was it covered by the PSA. Further discussion on the development of Southampton's local regulations is provided in section 4.3.2.

The PMO, Harris, believed the first patient, the engineer, had been ill for a number of days and he had 'no doubt that the Ship was the source of infection'.[377] Harris reported to the local health committee that as 18 days had passed since the last case emerged and the incubation period was 12 to 14 days, 'we may, I think, fairly assume that the spread of the disease imported has been successfully stopped'.[378] In his annual report he noted that 'careful attention has been given to prevent the extension of infection to residents of the borough from imported cases of infectious disease'.[379] He informed the council that

> no better example in my opinion can be brought forward than this to prove the safeguard isolation hospital accommodation is to a Town, and the urgent necessity there is in a seaport of this character of being fully prepared to isolate the first cases of any infectious disease that may be brought to the town by ships or other means.[380]

The risks were taken seriously, to the point that one coastal voyage, which originally arrived at Plymouth from Barbados had precautionary measures repeated upon arrival at Southampton to prevent the spread of yellow fever. When the S.S. *Medway* arrived in Southampton Water in 1897 despite the Plymouth authorities reporting 'all precauations taken', the Southampton PMO felt it was necessary to re-perform

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[374] Hartley Library (Cope Collection) Minutes and Proceedings of Council and Committees, (1897) 1 Dec 1897, pp.121-2
[375] Ibid. 1 Dec 1897, p.122
[376] Ibid. 1 Dec 1897, p.122
[377] Ibid. 1 Dec 1897, p.122
[378] Ibid. 1 Dec 1897, p.122
[379] Harris, A. W., *Sixth Southampton Port Sanitary Authority Report for the year ended 31st December 1897, part of Annual Report on the health of Southampton* (Southampton: 1898) p. 3
[380] Minutes and Proceedings (1897) 1 Dec 1897, p. 123

disinfection of the seamen's forecastle and contents, and the ship's hospital.[381] He also took the passengers and crew's names and addresses, forwarding these details to the relevant district MOHs, in accordance with national regulations.[382] Upon completion, the delayed vessel continued to the dock quay.[383]

Despite the diligence of the authorities, some incidents of disease appeared in the town. For example, in 1905, the S.S. *Nile* arrived having experienced one death from smallpox.[384] After an inspection found no symptoms of smallpox, the crew and passengers disembarked.[385] The body was removed to the mortuary in a 'sealed metal coffin,' whilst persons attending the patient were bathed and disinfected, along with the ship's linen and bedding.[386] Although it seemed in this case that any risk had been contained, eleven cases of smallpox later occurred in the town; ten of these were traced back to the S.S. *Nile*.[387] Each patient was immediately moved to the hospital ship, and all contact persons bathed, disinfected and re-vaccinated.[388] With regards to disease, the threat ports posed to the connecting town is clear. The role of the PSA was to mitigate this risk and protect the health of the town and ultimately the nation.

4.2. Southampton's Port Sanitary Authority

The Public Health Act, 1872 allowed the LGB to 'constitute any sanitary authority whose district [...] forms part of [...] a port in England' as a Port Sanitary Authority.[389] Although it is acknowledged that PSAs were established as part of this Act, the actual timing of their introduction across England and Wales has not been considered. When the LGB introduced PSAs, this did not happen simultaneously across the country. For example, 47 authorities had been established by 1874, including in Southampton in 1873, but 40 ports remained without a PSA, including Manchester where a PSA was not introduced until 1896.[390] More importantly, some were set up on a temporary basis before being made permanent, often without clear reasons for this decision. In 1893, *The Times* reported discussions about whether the 'PSAs of Gloucester, Bristol and

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[381] Ibid. 15 Oct 1897, pp.1438-9
[382] Ibid. 15 Oct 1897, p.1439
[383] Ibid. 15 Oct 1897, p.1439
[384] Hartley Library (Cope Collection) Minutes and Proceedings of Council and Committees, (1905), 5 April 1905, p.575
[385] Ibid. 5 April 1905, p.575
[386] Ibid. 5 April 1905, p.575
[387] Ibid. 5 April 1905, p.575
[388] Ibid. 5 April 1905, p.575
[389] Public Health Act, 1872
[390] *The Times* reported 47, whilst *The Practitioner* reported 46 PSAs being constituted. *The Times*, 12 February 1874, p.12. col. b, , 'Port Sanitary Authorities', *The Practitioner*, vol. 13 (1874) and 'Port Sanitary Authority For Manchester', *The Times*, 03 April 1896, p. 10 col. e

Bridgwater, whose existence was at present renewed from year to year by order for the LGB', should be permanent authorities.[391] There is some recent evidence that other PSAs began as temporary authorities. For example, at a nuisance abatement appeal in 2000 it was noted that the Falmouth 'port sanitary authority [was] first set up permanently in 1888', implying that before 1888 a temporary authority was in place.[392]

It is clear that the formation of PSAs across England and Wales was staggered. This meant the protection they provided the country against imported diseases not only varied according to the different quarantine approaches adopted (as discussed in previous chapters), but also according to when and if the LGB decided to create a PSA. In order to shed some light on the reality of the birth of a PSA, there follows an examination of the creation of Southampton's authority.

Southampton's PSA began life as a temporary authority in 1873.[393] The powers granted to Southampton's temporary and later permanent PSA were the same. In the 1872 Act, it was stated that previous extant Sanitary Acts and Orders dictated PSAs' powers, rights and duties. The Public Health Act, 1875 laid these duties down more clearly, stating that PSAs had powers over 'ships, vessels, boats, waters or persons within their jurisdiction' in relation to remedying nuisances, isolating infectious diseases and exercising power over hospitals and mortuaries.[394] Annual contracts detailed the temporary status and powers of Southampton's PSA, including the authority's boundaries, the appointed Port MOH and Inspectors and their wages.

Southampton's PSA remained temporary for 20 years during which time the local council requested permanent status on at least two occasions.[395] In response to one request in 1890 the LGB reasoned 'it will not be practicable for them to make arrangements for setting up a permanent Port Sanitary Authority for the whole or part of the Customs Port of Southampton before that [current] order expires'.[396] The LGB did not elaborate on any specific issues preventing the authority becoming permanent. Temporary status remained for another three years, a minimum of two further contracts, leaving in doubt the LGB's reason why Southampton could not become a permanent authority in 1890.

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[391] 'Bristol Channel Port Sanitary Authorities', *The Times*, 18 January 1893, p. 13 col. f

[392] Court of Appeal (Civil Division), *R v Falmouth & Truro Port Health Authority ex parte South West Water LTD*, (2000)
<http://web.uct.ac.za/depts/pbl/jgibson/iczm/cases/falmouth.htm>. [accessed 16 March 2008]

[393] Hampshire Records Office South Stoneham or District Councils, 34 M 74 DS 1 (1872 - 1882), 16 July 1873, p.39

[394] Southampton City Archives Town Clerk's Miscellaneous Papers Box 30, SC/TCBox/30/5 (1881 -1892)

[395] Ibid.

[396] Ibid.

Then, without explanation, the LGB granted Southampton's PSA permanent status in June 1893.[397] The PSA's 1894 annual report remarked that the 'Mayor, Aldermen, and Councillors in June, 1893, were constituted by the Local Government Board a permanent Port Sanitary Authority', giving no further details on the matter or any possible repercussions.[398] Other sources including the order granting permanent status and health committee minutes during these years do not refer to the authority's change in status. The reasons for the timing remain unclear. This did not coincide with other PSAs being granted permanent status, for example in Falmouth in 1888 and Manchester in 1896.[399]

Although the LGB provided no reason, Southampton's PSA gained permanent status at a time when many municipal changes were taking place across the town. During the 1890s prominent members of the Council, such as James Lemon (1833-1923) a public surveyor between 1866 and 1900 and Mayor of Southampton in 1867, pushed for the development of social and municipal services such as libraries and public bathhouses.[400] In addition, Southampton became a trooping port in 1892.[401] Both the development of municipal services and the appointment of the trooping port may have been factors in the creation of the permanent PSA. However, council minutes and other records make no link between these issues and the status of the authority.

In relation to sanitary and health measures, the physical boundaries and limits of Southampton's port were ambiguous before the founding of the PSA in 1873. At the Royal Sanitary Commission (RSC) (1869-1871), the commissioners asked who should have 'authority extending over ships in harbour'.[402] Joseph Rankin Stebbing (1810-1874), a mayor, alderman and magistrate for the borough of Southampton, believed that 'the harbour authorities and the government should provide the means of placing an infected passenger afloat and not having him land in the town' and that a Medical Officer or Customs Officer should be able to decide on the matter.[403] When the Commission asked about the bodies governing the town and port, Stebbing informed them this was an area of 'very great difficulty' as under the 1866 Sanitary Act

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[397] Southampton City Archives Local Acts and Orders Relating to Southampton and Hampshire, SC 1/9/98 (1893)

[398] Harris, A. W., *Third Southampton Port Sanitary Authority Report for the year ended 31st December 1894* (Southampton: 1895) p.3

[399] Court of Appeal (Civil Division), and *The Times*, 03 April 1896, p.10 col. e

[400] Temple-Patterson, A., *Southampton: A Biography* (London: Macmillan, 1970) pp.175-6

[401] A trooping port was a port that was used by the military to embark and disembark troops onto troopships. Southampton's role as a trooping port and its impact on the work of the PSA is explored in detail in chapter 5.

[402] *P.P. Vol. xxxv C.281* p.331 question 5912

[403] Ibid. p.331 question 5912, Stebbing was Mayor of Southampton in 1867, and also the founder of Southampton Chamber of Commerce.

> A ship is made a house for the purpose of sanitary matters, but we should feel great difficulty in dealing with a ship that came up with cholera, [...] because the ship is not within the borough, although there is a clause that gives the borough authorities control over it within a certain distance from the town or parish.[404]

Thus, when a vessel arrived with cholera patients on board, it was not clear who was responsible for the vessel's sanitary state or for the treatment of the sick. The situation was made more difficult because since 1848 cholera infected vessels were no longer dealt with via quarantine regulations. This could have resulted in a vessel remaining off the shore of Southampton with cholera patients on board, there being no available accommodation for patients and confusion over whether the Southampton or New Forest authorities should be responsible. This was problematic for ports such as Southampton because they could not effectively manage the arrival of disease. If they did so, by landing patients when no floating accommodation was available they could potentially 'place every ship from Southampton in quarantine all over the world, and very seriously affect the packet service around the country'.[405] Before the establishment of clear geographical boundaries, such as those laid out for the PSAs after 1873, there were difficulties in preventing the spread of disease. Although quarantine was seen to impede trade this example reinforces the idea that there was recognition in Britain that maintaining quarantine at home prevented the further detention of vessels abroad whilst many trading partners still believed in the system.

After 1873, each renewal order for Southampton's temporary PSA clearly defined the geographical area the authority would cover. Each order provided the following statement, or referred to this one made in 1881

> The Port of Southampton aforesaid lies within an imaginary straight line drawn from Hill Head to the Bramble Buoy and thence to Calshot Castle, together with the waters of the said Port within such limits, and the place for the time being appointed as the Customs Boarding Station for such part of the said Port, and every other place for the time being appointed for the mooring or anchoring of ships for such part of the said Port, under any regulations for the prevention of the spread of diseases issues under the authority of the Statutes in that behalf.
>
> And We Declare that the jurisdiction of the said Port Sanitary Authority shall extend to the water-sides of the said Districts, and to the docks, basins, and creeks belonging to that part of the said Port for which such Authority is hereby constituted.[406]

When the PSA became a permanent authority in 1893, the LGB made an additional distinction between the Southampton and Portsmouth authorities. The order stated 'a straight line following and coincident with the common boundary of the Customs Port of Southampton and Portsmouth' indicating a boundary between the points

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[404] Ibid. p.330 question 5911
[405] Ibid. p.330 question 5911
[406] SCA, SC/TCBox/30/5

of Hill Head, Bramble Buoy and Calshot Castle.[407] Previously the boundary between Southampton and Portsmouth PSAs had not been defined so this description ensured the boundaries of their jurisdiction were clear to each authority. Furthermore, the 1893 order made it clear that the Southampton PSA was also responsible for the Customs Boarding Station(s) situated near Hamble 'and the docks, basins, quays, wharves, rivers, creeks, streams, channels, roads, bays, and harbours within the aforesaid limits'.[408] These boundaries remained in place until 1935 when the LGB extended Southampton's PSA to include much of the waters up to the Isle of Wight, and across Stone Point to the west and southeast to Ryde pier (the red area on Figure 4.1).[409]

This clarification of areas for which the Southampton and Portsmouth PSAs were responsible resolved concerns expressed by Stebbing in 1869 over the confusion with the jurisdiction of local authorities. It meant that the establishment of local PSAs, temporary or permanent, significantly reduced the risk of a vessel arriving at a port amidst confusion over who was responsible for the sick on board and for disinfecting the vessel.

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[407] SCA, SC 1/9/98 pp. 3-4
[408] Ibid. pp.3–4
[409] *Annual Report of the Medical Officer of Health on the Sanitary Condition of the Borough for the year ending December 31 1935* (Southampton: Urban Sanitary Authority, 1935)

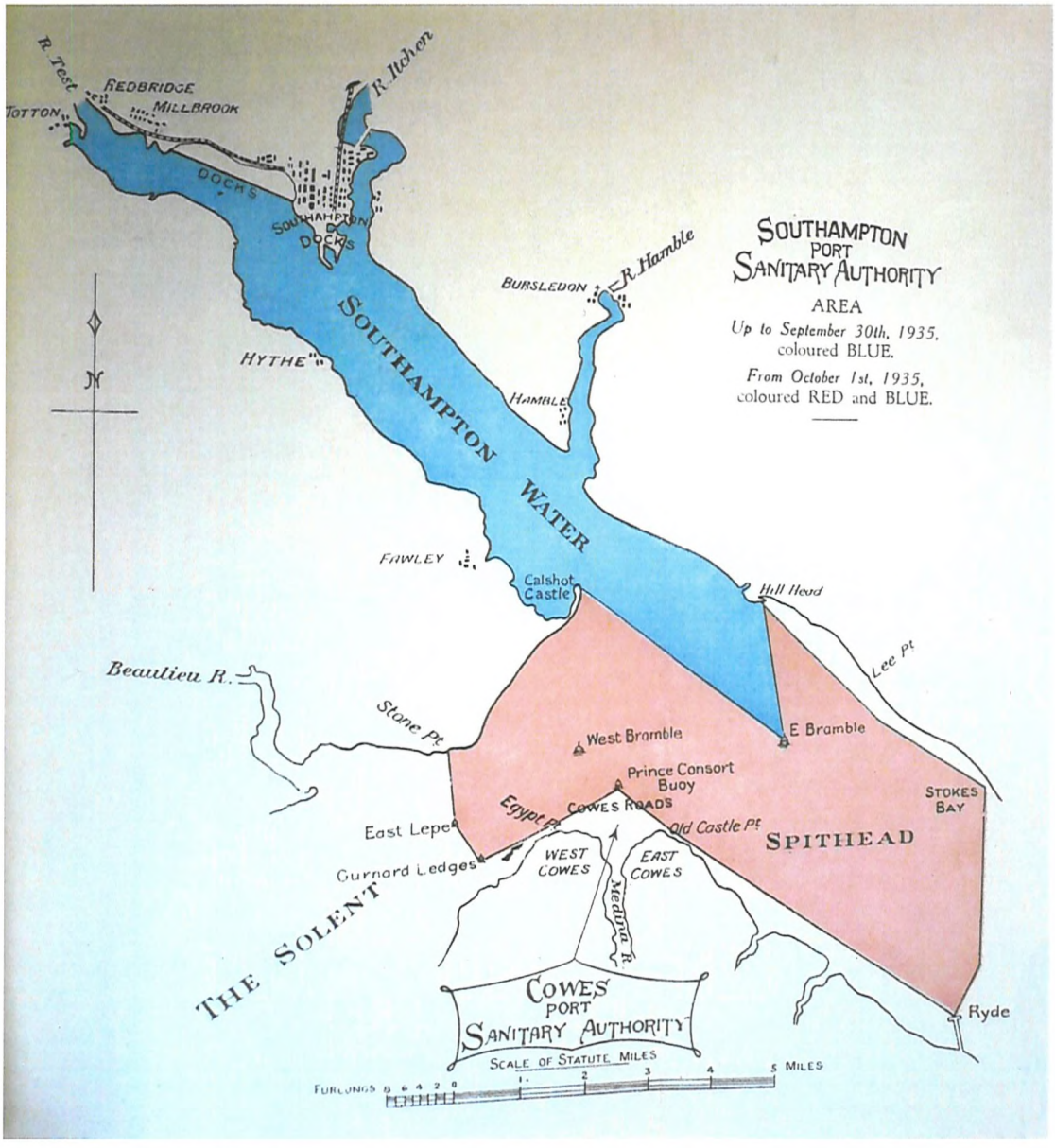

Figure 4.1 Map of the Port Sanitary Authority (1935)[410]

This history has shown that, like at least four other PSAs, Southampton's authority was established on a temporary basis and, in this case at least, when permanent status was granted the boundaries and responsibilities of the PSA did not change. Supported by the limited evidence available for other PSAs, it has been shown that the granting of permanent status of PSAs happened arbitrarily rather than as part of a national programme. Thus PSAs were developed as the need arose, following the pattern for the development of quarantine over the preceding 50 years.

[410] Ibid.

4.3 The Port Sanitary Authority responsibilities and local measures

Lawton and Lee have observed that 'port-cities, in general, showed little concern to protect health and in individual cases local councils actively opposed the implementation of public health legislation or fulfilled statutory obligations with something less than enthusiasm'.[411] This assessment seems unfair as some authorities, such as Southampton, actively implemented additional measures to prevent the spread of disease even in the face of ever-increasing responsibilities, a perceived lack of funds and at times understaffing (all of which PSAs willing complained about to the LGB).

4.3.1 Duties and funding

As Maglen has noted, PSAs had a wide range of responsibilities.[412] Previous legislation, mainly the Sanitary Act, 1866, defined the powers of the PSAs. However, just as quarantine developed between 1825 and 1896 via regular orders in council, the work of the PSA changed via circulars and orders from the LGB. The extension of responsibilities often resulted in concerns about the amount of work expected from the PSAs.

On behalf of the Southampton PSA, the PMO had to board all vessels arriving with patients suffering from infectious diseases.[413] Upon boarding vessels off the shore at Netley, the PMO conducted a medical examination and recorded the names and addresses of all disembarking persons. In line with guidance, the PMO forwarded the names and addresses to district MOHs.[414] The Public Health Act, 1872 stated that anyone who wilfully ignored the regulations could incur a penalty fine up to £100.[415] Baldwin has argued that this was not enforceable. There is no evidence of the PMO issuing fines because of false declarations on arrival in Southampton.[416] This does not mean that the law was unenforceable, but may indicate that the authorities did not discover incidents of misinformation. When patients needed to be isolated this 'took place without any communication with the shore [...and the] infected portion of the ship was disinfected off Netley', whilst bedding and clothing were removed by steam ambulance for fumigation at the West Quay isolation hospital disinfection unit.[417]

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[411] Lawton and Lee, eds. p.26
[412] Maglen p.423
[413] Hartley Library (Cope Collection) Minutes and Proceedings of Council and Committees, (1900), 5 Sept 1900, p.1872
[414] Ibid., 5 Sept 1900, p.1872
[415] Harris, A. W. and Linthorn, R. R., SC/H/33/19 (1901)
[416] Baldwin p.253
[417] Hartley Library (Cope Collection) Minutes and Proceedings of Council and Committees, (1895), 17 July 1895, p.1050

In addition to these duties, the PMO was also responsible for supervising the work of the Port Sanitary Inspectors. The PMO ensured that measures were taken to remedy 'nuisance overcrowding, or sickness' on vessels arriving in the port made enquiries 'into the water supply of vessels, and into the accommodation of the crew, preventing overcrowding', and saw that water tanks and bilges were emptied, cleansed and disinfected.[418] The PSA did more than simply protect the health of the town; it also played a role in protecting the health of seamen and the sanitary condition of ships. Sheard has recently explored the role of PSAs in safeguarding the health of seamen through an examination of the work of the Liverpool PSA.[419]

Previous research has not only neglected to acknowledge the involvement of orders in council in the development of quarantine, but also does not recognise the importance of LGB orders on the work of PSAs. The LGB issued circulars to inform all PSAs of foreign infected districts along with new national policies and legal requirements. For example, in October 1899 a circular was issued reminding all PSAs of 'the necessity for [...] Boarding Officers [to be], of the utmost vigilance with a view of preventing the introduction of plague by means of vessels reaching British Ports from abroad'.[420] They also informed PSAs of specific disease outbreaks, as in December 1899 when a circular stated that precautions were to be taken against the introduction of plague due to outbreaks in Portugal.[421]

The most significant change for the PSAs was the abolition of quarantine in 1896. Now, instead of the Customs Officer detaining vessels infected with cholera, yellow fever or plague, responsibility was transferred to the PMO who would take relevant action. Harris, the MOH and PMO for Southampton, had particular concerns about these additional responsibilities. He commented that

> As far as Southampton is concerned, since I was appointed Port Medical Officer the duties have considerably increased, and recently, since November 7th, 1896, have been still further increased, while a grave responsibility has in consequence fallen upon me in the execution of the new Orders.[422]

Concerns about the extra work, such as those made by Harris in 1897, are interesting because despite their complaint of further increasing responsibilities, the PSA had previously accommodated and disinfected patients with yellow fever and plague and disinfected the vessels on which they arrived.

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[418] Ibid. 29 Oct 1895, p.561

[419] Sheard, S., 'Mixed Motives: improving the health of seamen in Liverpool 1875-1939', in *European health and social welfare policies*, ed. by Abreu, L. (Compostela Group of Universities, 2004)

[420] P.P. Vol. XXXIII C. 292 *Twenty-ninth Annual Report for the Local Government Board (1899 - 1900)* (1900) p.263

[421] Ibid. p.261

[422] Minutes and Proceedings (1897), 3 Feb 1897, p.401

Other PSAs had similar concerns about the new responsibilities. In 1901, the Association of PSAs reported an 'enormous increase of work arising in the Port Sanitary Administration'.[423] At the 1902 meeting of the Association of PSAs, Walton, a Southampton alderman, raised the matter again with specific reference to the importance of the work placed on Southampton. He argued that as the number of patients with infectious diseases landing at Southampton was considerably higher than at other ports in the country, 'the responsibility of Southampton was very great indeed' and 'shewed [*sic*] how heavy a burden a comparatively small town had to bear'.[424] He added that 'a vast responsibility rested upon the ports of this country not only to keep a clean bill of health for themselves, but also for the whole of the country of which they were the front doors'.[425] He saw this responsibility as a 'national service'.[426] This illustrates not only the importance of examining the role of different ports in the history of port health, but also how the LGB circulars and new legislation had a significant impact on PSA workloads.

One impact of additional responsibilities and legislative changes, such as the abolition of quarantine, was the extra expense incurred by PSAs.[427] At the RSC in 1869, before PSAs were established, Stebbing raised concerns about the expenses incurred by local authorities in protecting the country from infectious disease. He remarked that 'it is not right either that any particular port should be burdened with the cost of keeping cholera or the similar diseases out of the kingdom, when most justly it is not a farthing expense as to yellow fever'.[428]

In Southampton, it was specifically noted in the 1892/93 annual accounts that prevention work against cholera had cost the PSA £600 9s 8d, whilst the Urban Sanitary Authority had paid out £2,048 15s 0d on smallpox prevention work.[429] In relation to preventing the importation of cholera, yellow fever and plague Harris reported to the Association of PSAs in 1900 that 'his authority [Southampton PSA] had almost given up all hope of ever receiving any aid from the Government'.[430] Nevertheless, the Association of PSAs pursued the matter and in 1902 Walton noted that

> While they [the Government] saved the expense of keeping up the ships [the S.S. *Menclaus* and S.S. *Edgar*] by the abolition of the quarantine arrangements, they threw the cost of the work which was substituted for quarantine upon the PSAs. The

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[423] Southampton City Archives Association of Sea and Port Health Authorities (Until 1946 called Association of Port Health Authorities, previous PSAs), SC/H 23/1/1 (1898 - 1913)
[424] Hartley Library (Cope Collection) Minutes and Proceedings of Council and Committees, (1901) 17 July 1901, p. 1746; and SCA, SC/H 23/1/1 19 August 1902
[425] SCA, SC/H 23/1/1 19 August 1902
[426] Ibid. 19 August 1902
[427] Minutes and Proceedings (1901) 7 Mar 1901, p.829
[428] *P.P. Vol. xxxv C.281* question 5918
[429] Audited Accounts 1892/3 p.39
[430] SCA, SC/H 23/1/1 3 August 1900

> present arrangement did not seem fair, but Southampton was doing its best, and he was quite sure that all present felt the importance of the work entrusted to them, and fully appreciated the responsibilities which devolved upon them.[431]

Walton reported that the government responded '"What does the cost amount to, after all - a penny in the pound?" and [...] the towns which got the benefits from the shipping ought to be prepared to put up with the disadvantages'.[432] The government was thus arguing that the cost of preventing yellow fever, plague and cholera was less than 0.5 pence per pound in today's terms.

The PSAs did not receive the response well, especially as the Privy Council had funded the prevention of these diseases when they were the responsibility of the quarantine authorities; PSAs received no extra funds upon becoming responsible for patients with yellow fever and plague. The cost of this extra work was borne locally. The cost of running the PSA in Southampton continued to increase from £1032 1s 9d in 1900/01 to £2191 5s 11d in 1913/14.[433] The only funds Southampton PSA and Urban Sanitary Authority received from the Exchequer were towards the wages of the MOH and the Port MOH, which between 1900 and 1905 was a 50% contribution.[434] After 1905 the percentage contribution of the exchequer was reduced to as low as 12% for the MOH in 1917/18 and 16% for the Port MOH in 1919/20.[435]

Despite strong opinions among the PSAs that they already had too many responsibilities, they continued to make suggestions to develop and improve their preventative work. In November 1900, members of the Association of PSAs discussed a proposal that all PSAs should receive information on the existence of infectious diseases identified at foreign ports to help preventing the importation of the diseases.[436] The LGB reported great difficulties with the suggested approach as it would rely on all British representatives reporting the information required from local authorities, with no guarantee of the accuracy of the 'official information supplied to Her Majesty's Representatives abroad'.[437] The LGB added that if this information was to be used it would be classifying ports as infected, which

> would lay themselves [Britain] open to the charge of having departed from the principle they have now maintained for between 40 and 50 years, viz., that a ship ought to be judged by the state of health of those on board, as ascertained by

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[431] Ibid. 19 August 1902
[432] Ibid. 19 August 1902
[433] Audits and Accounts 1900/01, 1913/14
[434] Audits and Accounts 1900 - 1905
[435] Audits and Accounts 1919/20, 1917/18.
[436] SCA, SC/H 23/1/1 23 November 1900
[437] Ibid. 23 November 1900

> inspection, and not by the state of health amongst the population at the port from which the ship sailed.[438]

This proposal could have been seen as a return to quarantine practices, whereby patients or vessels could be isolated according to their point of embarkation rather than because patients had experienced infectious diseases on board ship during the voyage or at time of arrival in a British port. This was something some nineteenth-century contemporaries had spent nearly a century trying to remove. It is possible that the PSAs saw this as purely useful information rather than a return to quarantine practices. As with arguments against quarantine, it was noted that this proposal would also mean British ports could be considered 'infected', which would seriously affect British shipping.[439] The LGB concluded that the best way forward was for the PMO to keep himself 'conversant with the abundant sources of information now available, and, having regard to the nature of the traffic in his port, using his own judgement as to when it is necessary'.[440]

Despite the arguments presented on the disadvantages of quarantine, less than five years after it was abolished (more since it was formally practised), PSAs were reconsidering the concept of infected ports rather than infected people as a way of preventing the spread of disease. This could indicate the lack of coherence between the practices of PSAs and the quarantine service, despite both wanting to prevent the spread of disease. Nevertheless, it is one example of PSAs actively attempting, though not succeeding, to introduce measures to improve port prophylactic measures, contrary to Lawton and Lee's suggestion that many authorities showed little concern about protecting the local population's health.

Staffing difficulties further complicated the work of PSAs. In 1892 Harris felt it was 'impossible [to inspect all vessels] here [in Southampton] unless a significant number of Medical Assistants be obtained'.[441] In 1895, the LGB asked the Southampton PSA to 'consider whether their existing sanitary staff is adequate for the prompt performance of the duties thus devolving on the MOH, in connection with the supervision of shipping generally in the district'.[442] Although Southampton's official response has not been located, no significant changes took place between 1892 and 1895. It is unlikely that Harris was content with the PSA staffing levels at the later date. At the

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[438] Ibid. 23 November 1900
[439] Ibid. 23 November 1900
[440] Ibid. 23 November 1900
[441] Harris, A. W., *Annual Report on the Port of Southampton* (Southampton: Hampshire Independent, 1892) p.77
[442] *P.P. Vol. XXXIII C. 292* p.262

health committee in May 1895 it was noted that the West Quay Isolation hospital was understaffed as one nurse had contracted scarlet fever and two nurses were employed on the hospital ship. Thus, staffing levels of local facilities, such as the isolation hospital, had significant consequences for Harris in his role as PMO.

A number of factors influenced the work of the PSA. Most significantly, the PSAs' workloads were amended via LGB circulars as well as the introduction of Parliamentary Acts, such as the Public Health Act, 1896. How they were able to conduct these duties was dependent on the availability of funds and staffing levels. In Southampton, staffing levels sometimes resulted in an inability to accommodate patients from the port adequately. (How the PSA resolved accommodation problems are discussed in section 4.4.3). Despite concerns that the PSAs had too many duties, too little money and at times not enough staff, in Southampton the PSA showed their initiative and rather than pro-actively oppose measures to protect local health, as Lawton and Lee have suggested about PSAs generally, the authority actively introduced local measures, such as those related to smallpox.

4.3.2 Local Measures: Smallpox 'friendly agreements'

Although national legislation and LGB orders dictated the work of the PSAs, the Southampton authority ensured there were clear measures in place to prevent the spread of smallpox, a disease not covered in national legislation. Maglen has noted that by law, ships' Masters were not required to pass information concerning smallpox to the Port Medical Officer or his representative.[443] In 1884, Osborn noted that 'a suspected case of small pox was sent to the hospital ship from a ship which arrived in this port'.[444] Though it was not compulsory to report smallpox patients, Osborn noted that it was 'nevertheless, the chief means of saving the town from an outbreak of small pox'.[445] In order to protect the town from smallpox, this practice was eventually formalised with shipping companies in 1893. In his first year as PMO, Harris organised a conference with leading shipping companies, including the Royal Mail Steam Packet and Union Steam Ship companies, to agree a 'friendly arrangement' for dealing with smallpox cases.[446] The Royal Mail Steam Packet and Union Steam Ship companies both

> promised to make arrangements to inform the MOH when any of the ships belonging to their respective Companies, having Small Pox on board, arrived or

[443] Maglen p.425
[444] Osborn, H., *Tenth Annual Report of the Medical Officer of Health on the Sanitary Condition of the Borough for the year ending December 31 1883* (Southampton: Urban Sanitary Authority, 1884) p.8
[445] Ibid. p.6
[446] Harris, *Second PSA Annual Report, 1893* p.6

> were expected at the port and to give every assistance in the removal of patients and the disinfection of the vessels off Netley, providing no unreasonable delay was exercised by the Authority.[447]

The Southampton PSA and shipping companies referred to this agreement as the 'friendly regulations'.[448] This demonstration of local initiative strongly supports Sturdy's argument that 'the actual business of local decision-making was worked out pragmatically, at the level of the sanitary authorities, through the much more socially inclusive processes of direct representation, consultation and negotiation'.[449]

The arrival of the S.S. *Scot* in February 1893 saw the first implementation of the friendly regulations. The vessel arrived from the Cape of Good Hope with two patients suffering from smallpox. The patients were removed to the isolation hospital by water ambulance, along with six crew members who were isolated for disinfection.[450] As with any vessel arriving with infected patients, the ship underwent disinfection before proceeding to the docks. In his annual report, Harris proudly stated

> It will be seen that by these arrangements a much greater protection is secured to the Port, as the danger of infection to persons who crowd to a vessel immediately she is alongside has been removed by the disinfection which takes place before the ship enters the Docks.[451]

Harris was not entirely satisfied because only the Union and Royal Mail Companies and no other shipping companies had agreed to the arrangement. This meant that many vessels, according to statute, could proceed straight to the docks, only informing officers when it was 'too late to take any precautions'.[452]

Friendly arrangements only worked while the Southampton health authorities and local shipping companies remained on good terms. As part of the agreement, the PSA provided shipping companies with advice on various medical issues. For example, upon witnessing a smallpox patient being isolated in a cabin next to eleven stewards, Harris informed the shipping company that 'the evil is obvious', and advised they should ensure their ships' hospitals are all 'placed on the upper deck as far aft as possible'.[453]

As well as being concerned with the arrival of smallpox from ships, Harris commented on the risks port workers posed to the town. In 1895 he noted in his annual report that

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[447] Ibid. p.6
[448] Ibid. p.6
[449] Sturdy p.13
[450] Harris, *Second PSA Annual Report, 1893* p.6
[451] Ibid. p.6
[452] Hartley Library (Cope Collection) Minutes and Proceedings of Council and Committees, (1898) 7 Sept 1898 p.1422
[453] Harris, *Second PSA Annual Report, 1893* p.24

> It does seem an anomaly that such stringent regulations should exist for yellow fever and plague while vessels with a dangerous disease such as smallpox on board may be allowed to proceed to Dock and the labourers and others employed in the details of unloading her are exposed to the risk of infection and the danger of subsequently spreading the disease to the town.[454]

Harris believed that in the absence of formal legislation, friendly regulations had contributed to the prevention of the spread of infection, resulting in the 'greatest benefit' to the town.[455]

Despite this, he remained cautious noting, what he described as, 'two important dangers'. Firstly

> There being no compulsion on the part of a master of a vessel to notify the existence of Small Pox on his vessel until she arrives in dock [...and secondly] our presence on board [...] is given on the understanding that our action must not cause great delay, consequently, if a large vessel is infected, one has to carry out their examination and adopt their methods of precautions hurriedly, and important points may unwittingly be overlooked.[456]

Harris was so concerned about the risk smallpox posed to the town, and the lack of power PSAs had to prevent the spread of the disease, that in 1898 he believed the time had come for the council to

> apply to the Local Government Board to use their influence in putting Small Pox on the other list of diseases, viz.: - Yellow Fever, Plague, and Cholera, so that we may have power to detain a vessel the necessary time to get all information we may require, and to deal legally with any suspicious cases.[457]

The recommendation was put to the LGB who adopted the resolution on 15 September 1898.[458] However, correspondence in 1900 indicates that the LGB went back on this decision when they stated that the difference between

> smallpox and the others diseases referred to, which are invariably introduced into the country from abroad, is so great and of such kind that they have not thought it necessary to amend the Order in the manner suggested.[459]

Still concerned about the danger of smallpox, in 1901 Harris noted 'the only satisfactory method of isolating smallpox is in a floating hospital removed a great distance from habitations'[460] The floating hospitals available to the port and town at this time were the S.S. *Alliance* and the S.S. *City of Adelaide*; both used to accommodate smallpox patients.

Unfortunately in 1914, Harris's fears about the spread of smallpox via port workers materialised with the arrival of the S.S. *Avon*. The vessel landed smallpox

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[454] Harris, A. W., *Fifth Southampton Port Sanitary Authority Report for the year ended 31st December 1896, part of Annual Report on the health of Southampton* (Southampton: 1897) p.19
[455] Harris, *Sixth PSA Annual Report for 1897* p.9
[456] Harris, A. W., *Seventh Southampton Port Sanitary Authority Report for the year ended 31st December 1898, part of Annual Report on the health of Southampton* (Southampton: 1899) p.18
[457] Minutes and Proceedings (1898) 7 Sept 1898, p. 1421; Harris, *Seventh PSA Annual Report for 1898* p.19
[458] Harris, *Seventh PSA Annual Report for 1898* p.19
[459] Minutes and Proceedings (1900) 5 April 1900 p.981
[460] Minutes and Proceedings (1901) 9 Apr 1901, p.1025

patient en-route to Southampton at Vigo, Spain, and reported no other cases.[461] Nevertheless, as a preventive measure the PSA staff inspected all passengers and crew, and disinfected bedding. One case of smallpox then emerged in the town; a worker employed in removing the bedding from the S.S. *Avon*. The patient was admitted to a hospital ship for treatment, and all contacts were placed under observation.[462] Even though the patient was a port-worker and had not arrived on a vessel, the outbreak was still classed as having arrived via the port. However, neither the annual report nor monthly council meeting minutes raised concerns about this matter.

There were also wider fears about the spread of smallpox. The Association of PSAs made a similar request to bring smallpox in line with yellow fever and plague in 1902 on behalf of many authorities. The Association argued that this move would 'enable persons on board to be examined by the MOH, and that until such examination be over no one on board shall be allowed to land'.[463] Due to disagreements from the London and Tyne PSAs, the Association made a revised proposal to the LGB requesting that, with regards to smallpox, all PSAs should have the power to detain vessels, vaccinate and re-vaccinate passengers, isolate immediate contacts (not only patients), and issue penalties to people withholding information (such as giving false names and addresses).[464] The LGB did not approve the revised proposal arguing that

> Hundreds, if not thousands, of people arrived at Dover every day, [...and] if names and addresses of all those people had to be taken and communicated to the MO of the place of destination, it would mean such a lot of routine work with negative results that there would be a danger of real Small Pox not being detected.[465]

It was agreed that the regulations would remain as they stood, and Southampton would continue their friendly arrangement with shipping companies. However, Southampton's local health committee still insisted that 'it is desirable that a more definite understanding and complete co-operation should exist where such large and varied interests are at stake'.[466]

In 1905, draft LGB regulations specifically for Southampton extended the PSA's work to include 'the removal to hospital of persons brought within the district of the Port Sanitary Authority by any ship or boat, who are infected with a dangerous infectious

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[461] Hartley Library (Cope Collection) Minutes and Proceedings of Council and Committees, (1914) 5 March 1914, p.355
[462] Ibid. 5 March 1914, p.355
[463] SCA, SC/H 23/1/1 19 August 1902
[464] Ibid. 19 August 1902
[465] Southampton City Archives Association of Sea and Port Health Authorities (Until 1946 called Association of Port Health Authorities, previous PSAs), SC/H 23/1/2 (1914 - 26), 25 June 1914
[466] Hartley Library (Cope Collection) Minutes and Proceedings of Council and Committees, (1904) 21 April 1904, p.655

disorder'.[467] The order noted that 'dangerous infectious disorder' now included smallpox, diphtheria, membranous croup, scarlatina, scarlet fever, typhus fever, typhoid or enteric fever, relapsing fever, continued fever, and puerperal fever.[468] This increased the number of diseases for which the PSAs were responsible. The order stated that where a Master was aware of a person on board having symptoms of a 'dangerous infectious disorder' the vessel had to stop at the Customs Boarding Station and send notice to the PMO. Anyone not adhering to these regulations could receive a penalty fine of £50.[469] These procedures were essentially a formalisation of the friendly agreements Southampton had put in force 12 years earlier.

Having cast some doubt on the accuracy of Lawton and Lee's claim that 'port-cities, in general, showed little concern to protect health', it is worth nothing that in the 1895 Port and Riparian Sanitary Survey of England and Wales Dr Richard Thorne Thorne (1841–1899), the Chief Medical Officer of Health 1892-1899, stated that in[470]

> The ports of London, River Tyne, Hull and Goole, Southampton, Weymouth, Plymouth, Bristol, Cardiff, Barry-and Cadoxton, Swansea, and Liverpool, the arrangements were not only highly satisfactory in themselves, but they were carried out with a devotion to duty on the part of many of the MOHs, such as must be regarded as having largely contributed to the marked success with which imported cholera was controlled at nearly all English ports during 1892 – 93.[471]

PMOs working in the PSAs clearly aimed to protect health and applied local initiative to do so. The history of port health cannot be examined from a national perspective alone because local measures were an important part of England's port prophylactic system.

4.4. Protecting Southampton: Interrelation of port and public health

Southampton's PSA worked closely with other local health authorities and medical facilities (public, private and voluntary) to ensure it could prevent the spread of disease most effectively. In the context of health and the public sphere, it has been noted that 'the boundary between state and civil society was [...] not sharp or distinct but blurred and permeable'. This is clearly demonstrated with respect to the boundaries between port and public health in Southampton.[472] Maglen acknowledges that the port health institutions (quarantine and PSAs) recognised that they 'required mutual co-operation and compromise where there was an overlap in the function of the two authorities' to fulfil

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[467] Minutes and Proceedings (1905) 4 January 1905, p.200
[468] Ibid. 4 January 1905, p.200
[469] Ibid. 4 January 1905, p.201
[470] Lawton and Lee, eds. p.26
[471] *P.P. Vol. LII C. 7812* p.11
[472] Sturdy p.13

their purpose.[473] It is surprising that previous research has not explored these links and overlaps in more detail; it may be due to Lawton and Lee's suggestion concerning port-cities' alleged lack of concern to protect the wider public's health.[474] In Southampton, the overlaps between port and public health further emphasise the PSA's commitment to protecting health of everyone.

4.4.1 Port Medical Officers and Medical Officers of Health in Southampton

Maglen has noted that PSAs were 'overseen by medical officers similar to those who worked in towns and cities'.[475] Only in Liverpool and London were the roles of Port Medical Officer (PMO) and Medical Officer of Health (MOH) separate. In Southampton, for a majority of the period the same person held the two positions.

The first temporary PMO, Dr John Wiblin, was appointed in August 1873 for two months, for a salary of £40 with an additional £10 if he was required to stay on for one further month.[476] Between 1874 and 1884, Dr Henry Bencraft was the PMO. In 1885, there was the first joint occupation of the two positions. Dr Henry Osborn, MOH for the town between 1884 and 1890, took on the role of Port Medical Officer until c.1889. A renewal contract, dated 21 January 1890, notes the re-appointment of Dr Henry Hope as the 'Medical Officer of Health under Southampton's Port Sanitary Authority'.[477] It is unclear from what date Hope became the PMO. In 1891, Dr A. Wellesley Harris became MOH for the borough taking on the role as PMO in 1892 when Dr Hope resigned. [478]

After Southampton's PSA was granted permanent status (1893), the same person occupied the roles of the MOH for the borough and the PMO. Upon application for the job as PMO, Harris told the council that 'should you honour me with the appointment of Port Medical Officer I will at all times endeavour to carry out the duties of such officer to the best of my ability and I hope to your entire satisfaction'.[479] When Harris resigned in 1901, to become the MOH for Lewisham, the council appointed Dr Robert E. Lauder as MOH for the town and port; he was in post until 1931 when he retired.[480]

For fourteen years (1873-1884, and 1890) Southampton had a separate PMO, like the Port of London and Liverpool PSAs; but once the PSA was granted permanent status, one person held the positions of PMO and MOH. The overlap of positions in

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[473] Maglen p.425
[474] Lawton and Lee, eds. p.26
[475] Maglen p.415
[476] HRO, 34 M 74 DS 1 August 23 1873, p.39
[477] SCA, SC/TCBox/30/5
[478] Ibid.
[479] Ibid.
[480] Williams, *Public Health in a Seaport Town* p.23

Southampton led to an entanglement of administrative routines. This is mirrored in current histories of port health, which show little understanding of the relationship between town and port health authorities. Maglen has noted that a 'peculiarity of the "English System" was that the health of the port was not separated from the internal health'.[481] Conversely, Baldwin has argued that port health and public health played two separate roles because 'some measures sought to prevent the import of disease in the first place, [whilst] others aimed at limiting its spread after arrival'.[482] Assessing the port of Southampton will establish whether port health was not separated from internal public health, as Maglen argues, or whether the two had clearly separate roles, as Baldwin suggests.

In practice, in ports such as Southampton, where one person was employed as both MOH and PMO, there was an overlap between the two authorities. The need for the two authorities to work together was recognised in Southampton in 1900. When reporting an incident of plague to the local health committee, Harris (Southampton's PMO and MOH) noted that

> To prevent its spread [...] it is necessary that the Health Authority [...] as well as the Port Sanitary Authority (which in Southampton are governed by the same Committee), should immediately provide all necessary machinery to deal with a distinct case of Plague, a suspected case of Plague, and the segregation of those persons who may have been in contact with a definite or suspected case.[483]

There was an awareness locally of the importance of working together to prevent the spread of disease, and by recognising that the same committee governs the Southampton authorities Harris implies that in other towns, health authorities were organised differently. It would be desirable to examine practices in other ports, but it is outside the scope of this study.

4.4.2 Southampton's port and public health services

The purpose of some hospitals in the town overlapped at times, starting with a focus on town health and later accommodating patients arriving in the port. It can even be shown that hospital admission policies altered throughout the nineteenth century, often to the benefit of the PSA. This also sets the context to explore further how the two authorities worked together to resolve problems such as lack of accommodation and prevention of the importation and spread of disease.

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[481] Maglen p.425
[482] Baldwin p.152
[483] Minutes and Proceedings (1900) 5 Sept 1900, p.1871

Between 1825 and 1919, there was a wide range of hospital accommodation available to Southampton's residents and visitors. These included institutions under the jurisdiction of the PSA or the Urban Sanitary Authority, as well as voluntary hospitals, dispensaries and the use of private residential housing. Although in theory available to everyone, most 'public institutions, be they voluntary or statutory, always tended to serve the interests of particular sections of the population over others'.[484] This was the case for most of Southampton's hospital facilities when they were first established, but during the nineteenth century they altered their admissions policies.

4.4.2.1 Dispensaries and Hospitals before the PSA: 1825-1872

In 1825, a number of dispensaries were available. Dr Middleton established a dispensary in 1809 'for the care of the sick poor' so that they 'might be saved the ignominy of having to resort to poor law relief'.[485] A second dispensary opened in 1823 with the sole purpose to 'encourage vaccination [...] as a precaution in view of the possibility of disease being brought into the port by foreign seamen'.[486] Although PSAs were not established for another 50 years, work was already underway to ensure that facilities catered for the health of seamen. Thus, there was a local objective to prevent the spread of disease between seafarers and residents. The two dispensaries merged in 1866, becoming the Southampton Dispensary and Humane Society that was open to town visitors (including those arriving at the docks) and residents until c.1948.[487]

In the 1830s, the construction of the new docks was a catalyst for the founding of what eventually became the Royal South Hampshire (RSH) Infirmary. In 1837, initiated by Dr John Bullar (c.1854-1929), a group of local doctors raised concerns after a number of accidents at the docks, pointing out that the 'facilities for the medical care of the workers [...was becoming] a matter of urgency'.[488] Bullar outlined a 'modest plan to open a casualty ward for the reception of patients, where accidents or severe surgical cases among the poor could be properly treated and receive nursing care'.[489] After some opposition, the group opened a casualty ward at Town Quay. It was later described as an 'experiment on a small scale' beginning with three beds and increasing to sixteen in

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[484] Sturdy pp.19-20
[485] Watson, D. M., *Proud Heritage: One hundred and thirty three years in the life of The Royal South Hants Hospital, 1838 to 1971* (Southampton: Wilson, 1979) p.10; and Williams, *Public Health in a Seaport Town* p.3
[486] Watson p.10
[487] Williams, *Public Health in a Seaport Town* p.4 and Court of Appeal (Civil Division),
[488] Williams, *Public Health in a Seaport Town* p.4
[489] Watson p.10

1840.[490] This was one of the first hospitals specifically directed at port and dock workers, but it also catered for the general population of Southampton. The doctors running the casualty ward realised there was a need for a larger, more permanent hospital for the region. In July 1843, after much consultation and discussion, the first stone was laid and in 1844, the RSH Infirmary formally opened as a voluntarily funded hospital and the smaller casualty ward at Town Quay closed.[491] The RSH policy on admissions stated that 'its object shall be the relief of destitute poor, disabled by accident or disease'.[492]

It has recently been noted that by directing so much help to 'the industrious poor – which the public considered worthy of philanthropic aid – it effectively consigned other groups, like the elderly, the mobile and those with chronic and infectious diseases to the statutory authorities'.[493] Dispensaries, the casualty ward and the RSH each began in this way focusing on the sick poor, accident victims (in particular dock workers) and the destitute poor respectively.

In addition to these facilities (the RSH, casualty unit, and dispensaries), there were also hospitals which focused primarily on patients from the port. In 1852 the S.S *Menclaus* and the S.S. *Edgar*, at the Motherbank, were available but only as part of the quarantine station. The Superintendent of Quarantine, Sir William Pym (1772-1861), believed that if the S.S. *Menclaus* was fitted-out correctly, it could accommodate between 70 and 100 patients; however this was never carried out and the vessel continued to be used for quarantine purposes until 1896, when quarantine was abolished.[494] As quarantine vessels they were controlled by the Privy Council, and were not used by the PSA.

The RSH's admission policy did change and by 1855 the hospital was receiving donations from shipping companies for the treatment of their seamen who could not be considered destitute poor.[495] The infirmary's management committee thanked the steamship companies connected with the port for their 'handsome donations' in 1855.[496] In 1856 the hospital specifically thanked Peninsular and Orient for their donation of £50

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[490] Davies, J. S., *A History of Southampton. Partly from the ms. of Dr. Speed, in the Southampton archives* (Southampton; London: Gilbert and Co.; Hamilton, Adams & Co., 1883) p.309, and Watson p.12

[491] Rossbret Institutions, *Hospitals, England Hospitals, Hampshire Hospitals, Royal Hampshire Infirmary*, <http://www.institutions.org.uk/hospitals/england/hants/royal_hampshire_infirmary.htm; >. [accessed 18 June 2007]; see also Watson pp.10-14; Williams, *Public Health in a Seaport Town* p.4

[492] Watson p. 15, and Appendix Rules and Bye-laws of the Royal South Hants Infirmary Southampton, 1844, p.190

[493] Sturdy p.126

[494] TNA, PRO 30/29/25/15

[495] Southampton City Archives Records of Royal South Hants Hospitals, D/RSH/2/1 (1855); Southampton City Archives Records of Royal South Hants Hospitals, D/RSH/2/2 (1856); Southampton City Archives Records of Royal South Hants Hospitals, D/RSH/2/6 (1860)

[496] SCA, D/RSH/2/1

and again in 1860 for a collected donation of £64.[497] In 1861, hospital records noted that 'the committee have again to return their warmest thanks to Capt. Engledue for his continued support in having collections made on board the P. and O. ships in harbour'.[498] In many of the later RSH annual reports, lists of donors included various shipping companies.[499]

In 1859, there was 'no Hospital accommodation for poor Seamen and those who may arrive at Southampton afflicted with Cholera'.[500] The RSH was not yet receiving patients who arrived at the port with infectious diseases, because the local authorities considered it was not sensible to send patients with cholera from the docks in 'an isolated spot', to the infirmary in 'a populous district'.[501] The S.S. *Edgar* and S.S. *Menclaus*, situated at the Motherbank, were for the sole purpose of quarantine but because cholera had not been a quarantineable disease since 1848, these vessels were of no use to cholera patients. This became a particular concern when the S.S. *Saxonia* arrived in October 1859 with cases of cholera onboard.[502] This dilemma resulted in a proposal for 'new hospital accommodation for the reception and treatment of poor seamen and others who may arrive then affected with cholera'.[503]

As a result of cholera outbreaks 'on June 20th, 1866, the Admiralty directed that the *AEolus* hulk be placed in Southampton Water for the reception of cholera patients', and 'the house at West Quay, belonging to Mr Bullock, was rented for one year at £50'.[504] This was the origin of the West Quay Isolation Hospital. Although this hospital concentrated on the treatment of infectious diseases, and was established as a consequence of cholera outbreaks, it has not been possible to ascertain whether this was as a direct result of the 1859 proposal. Nevertheless, this did mean that after 1866 hospital accommodation was available for patients with infectious diseases, including those arriving at the port of Southampton. After 1866, West Quay Isolation Hospital became the main hospital receiving patients from the port. Records of the hospital are scarce and it has not been possible to ascertain the hospital's original admissions policy.

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[497] SCA, D/RSH/2/2 ; SCA, D/RSH/2/6
[498] Southampton City Archives Records of Royal South Hants Hospitals, D/RSH/2/7 (1861) p.7
[499] Southampton City Archives Health and Hospital Records, D/CC/87 (1904 - 1933)
[500] The National Archives Privy Council, PC 1/4538 (1859)
[501] Ibid.
[502] Ibid.
[503] Ibid.
[504] Lemon, J., *Reminiscences of Public Life in Southampton (Vol. 1)* (Winchester: Henry March Gilbert & Son, 1911) p.9

In 1856, the Royal Victoria Military Hospital was constructed at Netley for the reception of military patients.[505] Built next to Southampton Water 'for its convenience in landing invalids direct from the transport ships', the War Office observed that it must not be seen as 'merely a Hospital, in the ordinary sense of the word [...] it must be looked upon rather as a military station of no inconsiderable size'.[506] Patients for the Royal Victoria hospital landed either at a pier near Netley or up river in the Southampton docks. Upon arriving at the hospital, 'invalids [would often] bring with them their wives and families'.[507] Netley became the main hospital for military patients arriving at the port of Southampton.

By the end of the 1860s there was one main hospital available for the treatment of patients arriving at the port, one for military patients and one for patients from the town, alongside a small number of voluntarily funded dispensaries. Although each of these catered for particular sections of society, each facility adjusted its admission policies, often to the benefit of seafarers and thus to the advantage of the PSA.

4.4.2.2 Floating and shore hospitals: 1872-1896

In the 1870s, the RSH infirmary continued to receive patients from the town as well as patients from the port such as seamen, as indicated through the continued gratitude of the RSH management committees towards the shipping companies' donations.[508] At the same time, the West Quay Isolation Hospital expanded due to concerns about the isolation of smallpox patients. Lemon, a public surveyor, noted that the council made efforts to buy Anspach House in West Quay. In August 1873, the health committee purchased the 'two houses at West Quay for conversion into a Contagious Diseases Hospital at a cost of £700'.[509] Records discussing this hospital generally referred to the institution as the West Quay Isolation Hospital or the Fever Hospital. It was only referred to as a Contagious Diseases Hospital when it was first being established.

On the site of the West Quay hospital 'a temporary hospital [was erected...] in case of any sudden outbreak of disease'.[510] This temporary hospital, in use between

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[505] Hoare, P., *Spike Island : the memory of a military hospital* (London: Fourth Estate, 2001) pp.89-111

[506] The National Archives War Office and successors: Registered Files (General Series), WO 32/6828 (1883 - 84)

[507] Ibid.

[508] Davies p.309. Sturdy (p.129) provides a good discussion and analysis on the funding of voluntary hospitals, including the move from primarily charity payments to patient payments, though this is not something the RSH appears to have undertaken at this time.

[509] Lemon p.66

[510] Ibid. p.66. This building was situated on Western Esplanade opposite where the Grand De Vere Hotel is now located.

c.1873 and c.1892, was an iron construction referred to locally as the Iron Hospital. This extension ensured there was more accommodation for patients suffering with infectious diseases, whether they arrived at the port or were residents of the town. The local MOH's annual reports refer to an Urban Sanitary Hospital between 1883 and 1889; it is possible that these were references to the West Quay Isolation hospital.[511] The West Quay Isolation Hospital continued to admit patients from the port, and was the main facility used by the PSA. Alongside this, at any one time there were up to two floating hospitals, known as sanatoriums, available to the PSA. Such vessels were separate to the S.S. *Menclaus* and S.S. *Edgar*, which remained available solely for patients from quarantined vessels.

Extending the facilities available to patients from the port, the PSA obtained a dedicated hospital ship, the S.S. *City of Adelaide*, in 1893 to accommodate cholera patients from the port and town; the vessel was available until 1923. The Southampton authorities used the ship to accommodate patients suffering from diseases ranging from convalescent scarlet fever to smallpox and cholera. Most importantly, it was always prepared to receive patients with plague.[512] Concerns about the isolation of smallpox patients in 1893 resulted in the local authorities obtaining the S.S. *Wolf* from the London and South Western Company (L&SWR) until May 1897 as 'a temporary sanatorium for smallpox cases'.[513] In May 1897, the L&SWR replaced the S.S. *Wolf* with the S.S. *Alliance*.[514] These floating hospitals were primarily used by the PSA; however, they were sometimes used to accommodate individual cases of infectious disease that emerged in the town when other accommodation was not available; (this is discussed more fully in section 4.3.3.).

4.4.2.3 Accommodation after quarantine: 1897-1919

After 1896, the Royal South Hampshire Infirmary, West Quay Isolation Hospital, Royal Victoria Military Hospital, S.S. *Alliance* and S.S. *City of Adelaide* were all available to accommodate Southampton patients. The growing population of the town (44,031 in 1851, 85,694 in 1891, 144,872 in 1911) and consequently its growing patient population,

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[511] Osborn, H., *Fifteenth Annual Report of the Medical Officer of Health on the Sanitary Condition of the Borough for the year ending December 31st 1888* (Southampton: Urban Sanitary Authority, 1889); Osborn, *Tenth Annual Report for the Borough and Port for 1883*

[512] Minutes and Proceedings (1897) 7 April 1897, p. 671, and 20 April 1897, p. 479; Harris, *Second PSA Annual Report, 1893* pp.28-34

[513] Hartley Library (Cope Collection) Minutes and Proceedings of Council and Committees, (1896) 15 July 1896, p.1079

[514] Minutes and Proceedings (1897) 5 May 1897, p.837

led to accommodation problems. One solution was the 1895 proposal for a new isolation hospital to cater for patients from the town as well as patients, including seafarers, arriving at the port.

In January 1896, a disused factory in Mousehole Lane was identified as the location for a new hospital. Although it was too costly to bring the building into a useable state, the authorities agreed the land was suitable as the site for a new hospital.[515] The LGB became involved in February 1896, asking for a copy of the loan request, site plan and details of the surrounding population.[516] Over the course of the following months, a 50 year leasehold loan of £1200 for the land was agreed.[517] The MOH presented the hospital specifications to the health committee, and the architectural design was chosen via a competition advertised in *The Builder*, *Building News* and *The Architect* offering 150 and 75 guineas for two chosen plans.[518] With so many applicants showing an interest, the closing date was extended from 31 August to 30 September.[519] In October, the council considered 43 applications, choosing the plans submitted by Messrs F.H. Greenaway and J.H. Smith, and Messrs George E. Halliday and John W. Rodger.[520] Between 1897 and 1899, detailed reports on the hospital's development were presented to the health committee, regular site visits made, and discussions took place about lighting, sanitary fittings, ambulance stations, sewer holes, and financial details, among many other issues.[521] The council planned to open the hospital on 8 February 1900, but slight delays meant that the facility opened in March 1900.[522]

Once opened both the town and port health authorities used the new hospital, which replaced the West Quay hospital as the main isolation facility for Southampton. The West Quay hospital building continued to be used by the PSA as an administration block for the floating hospitals, and as a storehouse. In 1905, the hospital also received patients arriving at the port and the council's health committee agreed it would continue to do so for 'so long as may be necessary in the interests of the Public Health'.[523] The council was concerned about protecting health and they considered the work of the PSA to be part of public health.

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[515] Minutes and Proceedings (1896) 13 Jan 1896, p.301
[516] Ibid. 19 February 1896, p.451
[517] Ibid. 19 February 1896, p.452, and 6 May 1896, p.825
[518] Ibid. 5 June 1896, pp.948-9
[519] Ibid. 7 July 1896, p.1074
[520] Ibid. 20 Oct 1896, p.1329
[521] Hartley Library (Cope Collection) Minutes and Proceedings of Council and Committees, (1899)
[522] Ibid. 6 Dec 1899, p.259
[523] Minutes and Proceedings (1905) 4 January 1905, p.200

During the First World War, changes to the organisation of the port meant significant alterations in the PSA's responsibilities. The closure of the port to all commercial traffic in 1914 for military purposes meant that any patients arriving at the port alongside the ships' crews were troops rather than the civilian passengers who previously dominated the work of the PSA. The main hospitals in Southampton did not accommodate military patients, with the exception of those arriving with infectious diseases, for which the Isolation Hospital at Mousehole Lane had allocated 30 beds. In addition, the LGB and War Office agreed in November 1914 to the use of the Hartley University College as a hospital base for military patients with infectious diseases.[524] The council suggested that Dr. R.E. Lauder, Medical Officer of Health for the borough and Port, be 'responsible for all disease entering the port, whether civil or military'.[525] Both the War Office and the LGB recognised the 'advantages of complete co-ordination to prevent disease entering the country'.[526]

Other troop patients were taken to the Royal Victoria Military Hospital or boarded on to troop and hospital trains. In a memoir by Bowser (a member of the Voluntary Aid Deployment in Southampton), reference is made to hospital sheds in the docks where patients were held before being transferred either to the hospital trains or local hospitals.[527] The impact of the arrival of troops on port health practices is discussed in chapter five.

There was a number of other hospital facilities available between 1825 and 1919, including the Shirley Warren Infirmary now known as the Southampton General Hospital (1902-), Shirley Children's Hospital and Dispensary for Women (1884-1974) admitting non-infectious diseases,[528] and the Southampton Free Eye Hospital (1889- 1994) though these were not commonly used by the PSA.[529]

Hospitals in Southampton altered their admission policies meaning they were available to patients arriving at the port (both seafarers and passengers), which demonstrates the blurred boundary between port and public health. The methods used by the PSA to address accommodation problems further illustrate the mutually beneficial spirit of cooperation between port and public health.

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[524] Williams, *Public Health in a Seaport Town* p.46. The Hartley University College started as the Hartley Institution in 1862, changing to the Hartley College in the 1890s Hartley University College in 1902, and Southampton University College in 1914. Temple-Patterson pp.154-55

[525] Hartley Library (Cope Collection) Minutes and Proceedings of Council and Committees, (1915) 27 April 1915, p.492

[526] Ibid. 27 April 1915, p.492

[527] Bowser, T., *The Story of British V. A. D. Work in the Great War* (London: A Melrose, Ltd, 1917)

[528] Williamson, D. A. J., *The History of Southampton Children's Hospital, 1884 - 1974*, 1990) <http://www.suht.nhs.uk/SCH/index.cfm?articleid=1328>. [accessed 18 June 2007] pp.5-6

[529] Public Health (Scotland) Act, 1867

4.4.3 Port and public health authorities: Accommodating patients

Southampton's PSA used state, private and voluntary facilities to accommodate patients from the port in order to prevent the spread of disease. The relationship between Southampton's PSA and the adjoining health authorities, including Southampton's Urban Sanitary Authority, South Stoneham Rural Sanitary Authority and the health authorities in Winchester, Portsmouth, the New Forest and the Isle of Wight were pragmatic and effective.

From its inauguration in 1873, Southampton's PSA encountered many problems accommodating patients. The way the port and public health authorities resolved these problems illustrates how they worked together to prevent the spread of disease. These issues were not unique to Southampton, as insufficient accommodation was often a concern raised by contributors to voluntary hospitals.[530] The consequences of a lack of accommodation ranged from the unavailability of nurses to manage floating hospitals (for example the S.S. *Alliance* in 1900) to financial implications such as additional and unexpected rent demands (as in 1901 when a private house was used to accommodate a patient).[531]

In 1892, Harris recognised that 'in order to keep the Port in favour, it is necessary that it should be free from all infectious diseases', which meant that accommodation problems had to be resolved.[532] This was important because the PSA had to 'not only serve the interests of the shipping companies, but also safeguard the health and interests of the inhabitants of the Town'.[533] This included members of the authorities and their families, as Stebbing acknowledged at the RSC, some two decades earlier, in 1871 when he reported 'we have our own wives and families there, and we are best able to protect ourselves'.[534]

Despite Harris's comments, accommodation problems were often resolved temporarily. A common solution was to use local houses, which sometimes led to long-term rental contracts. In June 1892, a patient with measles arrived at the port when the West Quay Isolation Hospital was accommodating smallpox patients. Harris, the MOH and PMO, believed the fever hospital was 'incapable of receiving more than one

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[530] Sturdy p.137
[531] Minutes and Proceedings (1900) 8 Feb 1900, p.656; Minutes and Proceedings (1901) 9 Apr 1901, p.1026
[532] Harris, A. W., *First Southampton Port Sanitary Authority Report for the year ended 31st December 1892, part of Annual Report on the health of Southampton* (Southampton: 1893) p.76
[533] Ibid. p.76
[534] *P.P. Vol. xxxv C.281* question 5858

variety of infectious disease at the same time'.[535] As a result, the measles patient was isolated in a private house.[536] In May 1893, the PSA adopted the same solution when they rented a property in Queen's Terrace to isolate two measles patients.[537]

Although Harris does not explicitly state his opinion on ideas of contagion, the approaches he adopted when accommodating patients indicate a belief in contagion theory, rather than miasma theory. In December 1893, three further examples show how the resolution of accommodation problems was related to ideas of contagion. With West Quay Isolation hospital full, a patient with German measles was isolated in their own home and two patients with scarlet fever were isolated at the deputy MOH's house. Harris reported that these examples illustrated the 'difficulties existing in the Port of Southampton in dealing with any epidemic disease brought by vessels'.[538] He also noted that the PSA was in a 'false position [...] unable to carry out their regulations, [and responsible for...] the extra cost which fell upon the ratepayers for the hurried, and [...] not too wise, selection of temporary means of isolation'.[539] With the arrival of a smallpox patient in 1896 these difficulties continued and led to the rental of houses in Shirley at the cost of £100 per annum for two years.[540] In July 1899, a patient with typhoid fever removed from the S.S. *Preussen* was isolated at a private nursing home.[541]

The MOH, Harris, appeared to believe that disease spread by contagion rather than miasma, as he went to great lengths to ensure patients with different diseases were isolated. Despite this, on at least one occasion he had to place patients with different diseases in the small West Quay hospital. Although Harris was not content with this option, he argued this was the lesser of two evils.[542] Despite cases of scarlet fever being isolated in other rooms at the West Quay Isolation Hospital, in 1897, a patient with typhoid fever from the S.S. *Christian Broberg* had to be isolated in a room normally used for nursing accommodation. The MOH had 'to choose one of two evils: leaving the man to die on the vessel, or let him run the risk of Scarlet Fever infection in West Quay Hospital'.[543] Even simple building maintenance caused problems. In June 1899, the West Quay Isolation Hospital required painting to reduce the high temperature in the

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[535] Harris, A. W., *Nineteenth Annual Report on the Vital Statistics and Sanitary Condition of the Borough and Port of Southampton for the year end 1892* (Southampton: Southampton Urban Sanitary Authority, 1893) p.37
[536] Harris, *First PSA Annual Report for 1892* p.75
[537] Harris, *Second PSA Annual Report, 1893* pp.6–7
[538] Ibid. pp.6–7
[539] Ibid. p.7
[540] Minutes and Proceedings (1896) 1 Jan 1896, p.258
[541] Minutes and Proceedings (1899) 5 July 1899, p.1528
[542] Minutes and Proceedings (1897) 3 Feb 1897, p.400
[543] Ibid. 3 Feb 1897, p.400

building, a previously reported problem.[544] This work temporarily reduced the availability of beds in the hospital, causing further accommodation problems.

The problem of identifying suitable isolation facilities was one that Harris immediately noted upon appointment as MOH and PMO in 1892. He suggested that there was a need for a new isolation hospital for the borough. At the same time, he considered there was a requirement for a hospital specifically for the port. However, he believed the size of the borough (ten miles in length) could cause delays in communication. He noted that 'hospitals built on piles, with water access' were a possibility but would be costly, and the strong tide and gales 'we are subjected to' in Southampton would have to be taken into consideration.[545] A further idea was for a wooden vessel to accommodate patients supplemented by a new borough hospital.[546] This wooden vessel could have been the arrival of the S.S. *City of Adelaide* in 1893, although this can not be confirmed from the records. Harris proposed that once abandoned, the West Quay hospital could be an administration block for the floating hospital staff and used for stores, whilst the originally temporary Iron Hospital, erected in c.1873 at the rear of the West Quay hospital site, would be employed during emergencies.[547]

According to Harris, the permanent floating hospital the S.S. *City of Adelaide* was invaluable for isolating cases of scarlet fever and the temporary vessel the S.S. *Alliance* was of utmost use in isolating cases of smallpox.[548] Without these vessels, it would have been impossible to isolate some patients.[549] Previous emergencies had also emphasised the importance of using floating hospital accommodation. For example, in 1894 when Lisbon authorities reported an outbreak of 205 cases of cholera, the Southampton health committee (including Harris as PMO and MOH) 'suggested the desirability of at once putting in force cholera precautions, in regard to ships arriving in this Port from Lisbon', including a floating cholera hospital.[550] In the PSA Annual Report, Harris claimed the most important aspect of the year's work was 'the continuance of careful inspection of vessels arriving from Cholera infected Ports,' despite the disease being of a less severe nature than previous years.[551] He considered this particularly significant because of the

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[544] Minutes and Proceedings (1899) 7 June 1899, p.1330
[545] Harris, *First PSA Annual Report for 1892* p.76
[546] Ibid. p.76
[547] Ibid. p.76
[548] Harris, *Seventh PSA Annual Report for 1898* p.23
[549] Ibid. p.23
[550] Hartley Library (Cope Collection) Minutes and Proceedings of Council and Committees, (1894) 27 April 1894 p.25
[551] Harris, *Second PSA Annual Report, 1893* p.3

frequent communication Southampton had with cholera-infected ports.[552] He hoped that the inspections and removal of nuisances had 'increased comfort to the crews of the vessels'.[553] He attributed the success of cholera prevention to the 'promptitude' of the medical attendants who notified the PSA of incidents, and to the presence of the hospital ship S.S. *Alliance*, which was maintained for emergencies.[554]

In December 1897, Harris continued to raise serious concerns about the lack of isolation facilities, informing the council that

> We are entirely without means for the isolation of [...] infectious diseases. This is unfortunate, owing to the present risks we run of the importation, by Royal Mail Steamers, of Yellow Fever, which is epidemic in the West Indies, and Plague by the Troopships arriving from Bombay.[555]

He added, 'it is all important that the land Hospital be proceeded with as quickly as possible, so that the Floating Hospitals may be at the entire disposal of the Port'.[556] The new isolation hospital opened in 1900 and accommodated patients from the town and port.

Identifying suitable smallpox accommodation remained an important and often urgent issue.[557] The MOH expressed the importance of and need for further hospital ships in March 1901 when a case of smallpox arrived on the S.S. *Morna*. At this time, the hospital ship housed one plague patient, so it could not isolate smallpox patients. Again, Harris used 'a back room at the old West Quay hospital' to isolate the patient.[558] The MOH suggested additional hospital ships were required but nothing came of this.[559] A further outbreak of plague in Cape Town, South Africa, led the MOH to note the necessity for the port to be prepared for emergency cases of plague and still have accommodation for smallpox patients over the forthcoming two or three years.[560]

In April 1901, after Harris had reported the pressing need for further accommodation, two patients with smallpox had to be isolated in two nurses' homes because the Hospital ship was being retained for plague patients, and the PSA was under 'an obligation from the Local Government Board not to remove cases of smallpox to the

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[552] Harris, *Third PSA Annual Report for 1894* p.34
[553] Harris, *Second PSA Annual Report, 1893* p.3
[554] Minutes and Proceedings (1897) 1 Dec 1897 p.123
[555] Ibid.1 Dec 1897, p.121
[556] Ibid. 3 Feb 1897, p.400
[557] Minutes and Proceedings (1901) 25 Mar 1901, p.1013
[558] Ibid. 25 Mar 1901, p.1013
[559] Ibid. 25 Mar 1901, p.1013
[560] Ibid. 25 Mar 1901, p.1014

new isolation hospital'.[561] The MOH believed this was the best solution under the circumstances but feared it was 'far from satisfactory'.[562]

To help resolve the problem of accommodating smallpox patients, Southampton's PSA purchased another floating hospital. In 1901 Hull PSA were removing their hospital ship from service due to rough waters and a lack of suitable moorings.[563] In April, after communication between the two authorities, Hull's PSA suggested that the Southampton health committee inspect the hospital ship before purchasing it for £750.[564] The Southampton authorities agreed to buy the vessel and arranged a loan of £1000 to cover cost of purchase, towage and repairs.[565]

As well as purchasing floating hospitals, using private housing and town facilities, the PSA also relied on voluntary hospitals. The main voluntarily organised hospital in Southampton was the Royal South Hampshire (RSH) Infirmary, which assisted the work of the port and public health authorities when possible. In April 1898, when a patient arrived from the S.S. *St Louis* with typhoid fever they were removed to an unspecified infirmary.[566] However, in October 1898, the PSA noted that 'frequent applications have been made to the R. S. H. Infirmary, who, unfortunately, were unable to assist us'.[567] Reasons for this are not clear.

The authorities also called upon hospitals outside the borough to remedy accommodation shortages. In 1901, Dr. Pern, of the South Stoneham Guardians, offered the use of West End hospital for the reception of smallpox patients.[568] In July 1908 and 1910, the Incorporation Infirmary at Shirley Warren accommodated cases of erysipelas from the port, including a patient from the R.M.S *Amazon*.[569] In 1913, the Mousehole Lane isolation hospital and the Incorporation Infirmary accommodated three enteric fever patients from the port.[570]

Importantly, this arrangement worked both ways, as the town also used port health accommodation, indicating that measures implemented to improve port and public health were integrated in the way Maglen has suggested. In July 1896, 'in view of the

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[561] Ibid. 9 Apr 1901 pp.1024-5
[562] Ibid. 9 Apr 1901 p.1025
[563] Ibid. 25 Mar 1901, p.1014
[564] Ibid. 2 Apr 1901, p.1018
[565] Ibid. 13 Apr 1901, p.1099
[566] Minutes and Proceedings (1898) 5 May 1898, p.908. The infirmary could have referred to either the RSH infirmary or the workhouse infirmary that was situated onsite with the workhouse until 1900 when it moved to the Shirley Warren area of the town and later became the Southampton General Hospital.
[567] Ibid. 5 Oct 1898, p.1563
[568] Minutes and Proceedings (1901) 13 Apr 1901, p.1098
[569] Hartley Library (Cope Collection) Minutes and Proceedings of Council and Committees, (1907) 2 September 1908, p. 826, and Hartley Library (Cope Collection) Minutes and Proceedings of Council and Committees, (1910) 6 January 1910, p.150
[570] Minutes and Proceedings (1904) 2 March 1904, p.376

alarming increase of Scarlet Fever' the accommodation of patients with infectious diseases was an issue.[571] In the first week of July, the MOH received notification of 28 scarlet fever patients, the highest number Southampton had experienced in one week.[572] The November 1896 health report for the town noted that out of 110 scarlet fever patients, 27 were admitted to the West Quay Isolation Hospital, showing that both the port and town health authorities used the hospital.[573] Due to this outbreak, Harris reported 'West Quay Hospital is full [...] and we are absolutely without means of isolation'.[574] The council agreed that unless further accommodation was found 'isolation must cease'.[575] In 1896 the floating hospitals the S.S. *City of Adelaide* and S.S. *Alliance* were also available but were not used because after the abolition of quarantine and the removal of the S.S. *Menclaus* and S.S. *Edgar* these vessels were set aside to receive patients with cholera, yellow fever and plague.

Arrangements for accommodating military patients were similar to those employed for civilian patients. For example, in May 1901, the LGB agreed that troops and their families arriving in the port could be isolated at the PSA's floating hospital without landing ashore.[576] The local health committee recorded that the Admiralty would pay for the costs of any military patients accommodated in the port hospital.[577] The isolation hospital also monitored those who had been exposed to patients for between five and ten days at a reserved pavilion.[578]

The port of Southampton experienced accommodation problems between 1825 and 1919, adopting solutions from the temporary loan of hospital ships to the construction of a larger isolation hospital suitable for patients from both the town and port. The way the PSA used both port and town hospital accommodation, with the cooperation of public, private and voluntary organisations, reveals the productive working relationship in which the port and town authorities engaged. A boundary between port and public health existed clearly in legislation, in renewal orders and the permanent status of the PSA, but in practice these authorities worked together to protect the public's health.

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[571] Minutes and Proceedings (1896) 15 July 1896, p.1079
[572] Ibid. 7 July 1896, p.1074
[573] Ibid. 21 Dec 1896, p.198
[574] Ibid. 7 July 1896, p.1074
[575] Minutes and Proceedings (1895) 14 Sept 1895, p.1253
[576] Minutes and Proceedings (1901) 1 May 1901, p.1227
[577] Ibid. 1 May 1901, p.1227
[578] Ibid. 1 May 1901 p.1222, p.1228

4.4.4 The Port Sanitary Authority and health authorities outside Southampton

The spirit of cooperation between Southampton's PSA and other health organisations extended outside the town to regional health authorities, including the Isle of Wight, Portsmouth and the New Forest.

A good relationship with the Isle of Wight PSA was necessary because of the jurisdiction boundary they shared. This is highlighted by the arguments that were agreed to solve another of Southampton's accommodation problems. In 1895, the Southampton health committee contacted the Chairman of the Isle of Wight Company requesting use of their yacht for a smallpox patient and any other smallpox patients arriving in Southampton that required isolation.[579] The Cowes PSA rejected the proposal but did agree that another vessel, the S.S. *Alexandra*, could be used for £15 a month, plus £400 for insurance.[580] One condition of this rental was that the Southampton PSA would provide accommodation for patients with smallpox or cholera that arrived in the port of Cowes.[581] The council agreed, and the vessel was moored in the River Test at a total cost of £138.[582]

The same situation drove Southampton PSA to establish the foundations of a relationship with the Portsmouth authorities. In 1901, the Southampton PSA asked Portsmouth PMO if they would assist in accommodating people who required observation after being in contact with plague patients.[583] This was not accepted but Portsmouth PSA suggested camps should be set up to monitor military contacts, but this would not be suitable for civilian contacts.[584] Southampton's MOH suggested that military camps could be set up at the Royal Victoria military hospital, and that a pavilion at the Mousehole Lane Isolation hospital be reserved for the observation of civilian contacts.

This relationship with the Portsmouth authorities was strengthened in 1902 when it was suggested that they jointly purchase a vessel 'for the reception of patients suffering from diseases not already provided for'.[585] During discussions, the Southampton authorities added that after the abolition of quarantine in 1896, it would have been useful 'if the Government had made a present of those vessels [the S.S. *Menclaus* and the

[579] Minutes and Proceedings (1895) 14 Sept 1895, p.1253
[580] Ibid. 24 Sept 1895, p.1257
[581] Ibid. 24 Sept 1895, p.1257
[582] Ibid. 24 Sept 1895, p.1257
[583] Minutes and Proceedings (1901) 1 May 1901, p.1227
[584] Ibid.1 May 1901, p.1227
[585] SCA, SC/H 23/1/1 19 August 1902

S.S. *Edgar* at the Motherbank] to PSAs'.[586] In October 1908, the Portsmouth PMO requested that the Southampton PSA remove and treat cholera patients that arrived at the port of Portsmouth.[587] Southampton's health committee reported they 'could not entertain the suggestion'.[588] No explanation is given, so it is unclear whether this meant it was another authority's decision or that it was not logistically possible.

Southampton's PSA also established relationships with the New Forest and Winchester health authorities, often to provide additional accommodation. In May 1908, Southampton's PSA traced three cases of smallpox occurring in the town back to the arrival of the S.S. *Severn*.[589] The patients included a 3rd engineer, a butcher from the vessel who was residing in Marchwood, near the New Forest, and a barman in Millbrook whose brother was from the ship.[590] All three cases were removed to the Hospital Ship, including the butcher at the request of the New Forest Authorities.[591] In addition, the Southampton authorities removed all contacts to West Quay for disinfection and vaccination or re-vaccination as required.[592] In September 1913, the Winchester rural district council asked Southampton PSA if the Mousehole Lane isolation hospital could accommodate smallpox patients from the Winchester area.[593] Southampton's local health committee agreed to reserve one bed on the hospital ship for Winchester's smallpox patients at a cost of £60 per annum, and £3 3s per week whenever it was occupied; they agreed a charge of £5 5s per week for any extra beds.[594]

The use of Southampton's isolation facilities by town, port and other regional health authorities continued throughout the period. The 1915 to 1920 MOH annual reports give details of the number of patients from the town, port and regions that were accommodated at Southampton's Mousehole Lane isolation hospital. As shown in

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[586] Ibid.19 August 1902
[587] Hartley Library (Cope Collection) Minutes and Proceedings of Council and Committees, (1908) 7 October 1908, p.931
[588] Ibid. 7 October 1908, p.931
[589] Ibid. 3 June 1908, p.614
[590] Ibid. 3 June 1908, p.614
[591] Ibid. 3 June 1908, p.614
[592] Ibid. 3 June 1908, p.614
[593] Hartley Library (Cope Collection) Minutes and Proceedings of Council and Committees, (1913) 3 September 1913, p.821
[594] Ibid. 3 September 1913, p.821

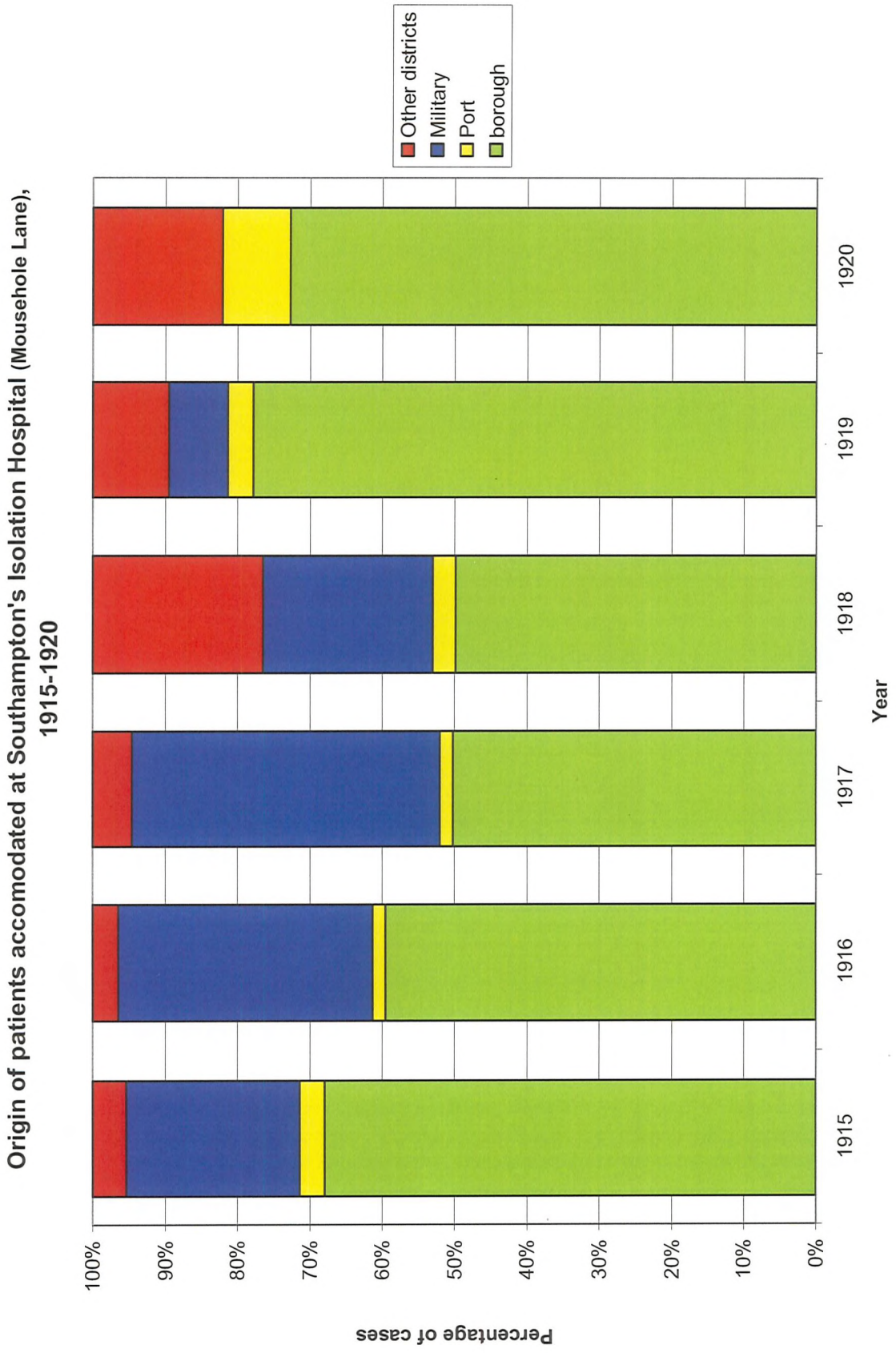

Figure 4.2 Origins of patients in Southampton's Isolation Hospital (Mousehole Lane), 1915-1920

figure 4.2, between 1915 and 1917, 5-7% of the hospital's patients were from districts outside Southampton, and between 1918 and 1920, this increased to 11-22%.

Despite the problems the Southampton authorities often encountered in accommodating local and port patients, they still entered into one-off and long-term agreements to assist in the accommodation of regional patients suffering from smallpox and other diseases.

4.4.4 Preventing the spread of disease

Despite the measures implemented to resolve isolation problems and accommodate patients, some diseases spread to town residents. Between 1825 and 1893, Southampton had three main hospitals: the Royal South Hampshire Hospital, the Isolation Hospital (West Quay), and the Royal Victoria Military Hospital (Netley); the Mousehole Lane isolation hospital did not open until 1900. Up to 1893 the only hospital with regular statistics on diseases treated is the Isolation Hospital. Although limited the data does give an indication of the degree disease spread from ship to shore.

	1887	1888	1889	1890	1891	1892	1893
Smallpox	3	2	1	4	15	37	152
Scarlet fever		3	1	8	10	18	
Typhoid fever				7		17	
Measles							4
Yellow fever[595]				4			
Diphtheria			1	1			1
Cholera							1
Total	3	5	3	20	25	72	156

Table 4.1 Patients admitted to the Isolation Hospital (West Quay), 1887-1893.[596]

Only the smallpox statistics are useful because the data for all the other diseases do not include patients from the port. This is probably because there was intense interest in smallpox, which culminated in the friendly regulations with shipping companies.

The PSA traced the four smallpox patients isolated at the hospital in 1890 back to the port; the PMO admitted three to hospital directly from the vessel and the fourth was a sailor sent to the hospital after he had returned home.[597] In 1891, four cases originated from the port and the PMO believed that eleven other patients had contracted the disease

[595] The cases of yellow fever were not included in the total admissions for the year.
[596] Harris, A. W., *Annual Report on Vital Statistics and Sanitary Condition of the Borough of Southampton for the Year 1890, submitted to the Urban Sanitary Authority.* (Southampton: Urban Sanitary Authority, 1891) p.13, and Harris, A. W., *Twentieth Annual Report on the Vital Statistics and Sanitary Condition of the Borough and Port of Southampton for the year end 1893* (Southampton: Southampton Urban Sanitary Authority, 1894) p.42
[597] Harris, *Seventeenth Annual Report for Borough for 1890*

via contact with the original patients.[598] From 1892 onwards, the annual reports on the health of the town and port provided detailed information about individual cases. This was possibly due to the increasing menace of smallpox; however, it also coincides with the appointment of Dr A. Wellesley Harris as the new MOH and PMO, who may have simply instigated a change in reporting style.

In 1892 an outbreak of smallpox, which saw the isolation of 37 patients, was 'conclusively' traced to the S.S. *Tamar*, which arrived on 30 January.[599] Three cases were isolated upon arrival at the port, yet before the PMO completed his enquiries, the crew were discharged, spreading smallpox across the town. In the annual reports, council minutes and local correspondence available there were no comments on why the PSA could not conduct their full enquiries.[600] Although only a limited number of smallpox patients arrived via the port in 1892 the authorities considered the port to be the source of the year's outbreak.

The friendly agreement with shipping companies to report any smallpox patients upon arrival in Southampton may account for the significant increase in reported cases of smallpox in 1893. However, the local authorities reported tramps as the cause of the outbreak. Despite the arrival of four smallpox patients at the port on three separate occasions, the MOH reported that 'there can be little doubt that tramps, not only in this town but in other places, were responsible for the dissemination of Small Pox'.[601] Of the patients disembarking at the port, two were removed in February from the S.S. *Scott*, one in July from the S.S. *Berlin*, and the fourth in August, also from the S.S. *Scott.* Patients from the S.S. *Scott* disembarked off the shore at Netley for treatment at the Royal Victoria Military Hospital. Upon arrival at Southampton docks, the PMO transferred the S.S. *Berlin* patient directly to the West Quay isolation hospital, along with six contacts that he sent for disinfection. No connection is made between the incidents of smallpox arriving at the port and the outbreak in the town in the annual reports.

Though the port was a major route for the importation of disease, it was not always the source. Of the patients admitted to the isolation hospital in 1894, only three were from the port: one with measles, one with scarlet fever and one with smallpox. The smallpox patient arrived on 16 September; however, the borough had already hospitalised seventeen smallpox patients from the town between February and August,

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[598] Harris, A. W., *Annual Report on Vital Statistics and Sanitary Condition of the Borough of Southampton for the Year 1891, submitted to the Urban Sanitary Authority.* (Southampton: Urban Sanitary Authority, 1892)
[599] Harris, *Nineteenth Annual Report for Borough and Port for 1892* p.47
[600] Ibid.
[601] Ibid.

and reported no cases after September. In this instance, the smallpox case from the port appears to have had no adverse impact on the health of Southampton residents in 1894.[602]

	1894	1895	1896	1897
Diphtheria			2	1
Measles	5	2	32	32
Plague				1
Puerperal fever			1	
Scarlet fever	2		2	
Smallpox	4		6	15
Typhoid fever	10		10	15
Yellow fever	n/a	n/a	2	3

Table 4.2 All diseases notified on arrival in the Port, 1893-1897.[603]

The data in Table 4.2 includes patients who were not landed in Southampton or who had been landed earlier in the voyage. Thus, it is difficult to draw definitive conclusions about the landing of patients in Southampton. In 1897, out of the fifteen cases of smallpox notified, only three patients were landed at Southampton. They were all removed to the floating hospitals the S.S. *Adelaide* and the S.S. *Alliance*. The reported cases of yellow fever in 1897 were notifications of deaths that had occurred during the voyage. Due to an outbreak of yellow fever in Jamaica that year, tighter controls and observations had been in force on vessels arriving from the area, which may account for the increase in numbers reported in 1896 and 1897.[604] The abolition of quarantine in 1896 explains the increase in patients with yellow fever, who would previously have been dealt with by the Customs officials.

4.5. Conclusion

The arrival of ships with patients carrying infectious diseases presented a risk to Southampton residents. This chapter has shown that in practice the Port Sanitary Authority played a pivotal role in preventing the spread of disease from the port. When the LGB temporarily established the Port Sanitary Authority in 1873, they set down clear geographical boundaries in annual renewal orders, clarifying uncertainty over responsibilities for particular ships, addressing concerns raised by Stebbing at the Royal Sanitary Commission. The scope of the authority, however, was vast and regularly increasing as directed by parliamentary acts and Local Government Board circulars and orders, as was the case for the development of quarantine. These increasing

[602] Harris, *Twenty-First Annual Report for 1894*
[603] Collated from data produced in Harris, *Fifth PSA Annual Report for 1896* and Harris, *Sixth PSA Annual Report for 1897* . Before 1896 the Customs Officials would have been collated the data for yellow fever as this disease was treated by quarantine, thus is was not reported by Harris.
[604] Harris, *Sixth PSA Annual Report for 1897*

responsibilities led to concerns, not only in Southampton but nationally, about the funding available to Port Sanitary Authorities to undertake the work.

The regulations did not encompass all diseases, for example smallpox, which was becoming more prevalent. Gaps in the legislation, such as those concerning smallpox, required lateral thinking by the Port Sanitary Authority to prevent the spread of the disease. In Southampton, the reporting of smallpox patients was formalised with shipping companies via friendly agreements in 1893. This benefited patients themselves and the town as a whole.

To fulfil its responsibilities the Port Sanitary Authority could use a range of state, military, private and voluntary hospital facilities, including hospital ships between 1825 and 1919. Port and public health authorities had to work together. Hospitals and other facilities often changed their admissions policies to the benefit of the Port Sanitary Authority to include patients from the port, including seafarers. In Southampton, after the Port Sanitary Authority was established permanently in 1893, the posts of Port Medical Officer and Medical Officer of Health were normally held by one person facilitating collaboration between the two authorities. These fluid boundaries between authorities extended outside Southampton, ensuring that the Port Sanitary Authority was able to protect the residents of Southampton from the spread of infectious disease.

Chapter 5: Trooping and Southampton

Prophylactic measures have been an important factor in military operations and many scholars have made connections between war and the spread of epidemics.[605] However, research into the history of port health has neglected to explore the impact of trooping on port prophylactic practices. Any increase in the number of people passing through a port would lead to a higher risk of disease spreading from ship to shore. Therefore, it is important to examine how the movement of military populations, such as the seven million troops who passed through Southampton between 1914 and 1919, affected port health practices. This chapter will begin by analysing the history of trooping and troopships and their role in Southampton, then discuss the effect of trooping on the port and town of Southampton, and finally the impact on Southampton's port health practices and the health of the town health. [606]

Beckett has noted that 'transport, or logistics in modern military parlance, is one of those unglamorous subjects rarely mentioned in historical accounts. Yet, it is vital to the success or failure of operations and of grand strategy'.[607] As Winston Churchill stated in 1898, 'victory is the beautiful, bright-coloured flower. Transport is the stem without which it could never have blossomed'.[608] Histories of Southampton have neglected to explore the town's role as a trooping port. Lawton and Lee have noted that 'ports such as [...] Southampton [...] remained susceptible to wartime dislocation'.[609] In 1894, Southampton became a premier trooping port for Britain and at the outbreak of the First World War the port was taken over by the War Office resulting in a move from the commercial focus of the port. Reflecting these developments, each section is divided into three periods, 1825 to 1893, 1894 to 1913, and 1914 to 1919.

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[605] See for example, Smallman-Raynor, M. and Cliff, A.D. ; Evans, 'Epidemics' ; McCoy ; Harrison, M., *Medicine and Victory : British military medicine in the Second World War* (Oxford; New York: Oxford University Press, 2004)

[606] The term Troopships is used to describe ships that carried troops, however, they are also sometimes referred to as transports. This chapter will use troopships, unless specific quotations or evidence states otherwise.

[607] Beckett, I., 'Going to War: Southampton and Military Embarkation', in *Southampton: Gateway to the British Empire*, ed. by Taylor, M. (London: I. B. Tauris, 2007) pp. 133-148, p.133

[608] Ibid. p.133

[609] Lawton and Lee, eds. p.7

5.1. Troops and troopships

5.1.1 Sail to steam: 1825–1893

Between 1825 and 1893 the organisation and use of troopships underwent significant changes. Before the Napoleonic wars, the organisation of troop transportation was the responsibility of the Board of Commissioners for Transport. However, upon the Board's abolition in 1817 its functions merged with the Admiralty, who then took charge of trooping.[610] It was however, not until 1840 with the First Opium War between China and Britain when 'a large number of vessels had to be chartered to supplement the normal means' that the 'new system was really tested'.[611] The main commercial companies involved in the transportation of troops were the Peninsular and Oriental Steam Navigation Company (P&O), the British India Steam Navigation Company and, the smallest, the Bibby Line.[612] In the late 1830s, Southampton saw the start of major dock developments, with the construction of the Outer Dock in 1838. When this came into use in 1843 P&O made Southampton its headquarters bringing with it trooping to the town. The Royal Mail Steam Company began using the docks in 1845.[613]

Sail was still predominant in 1825; steam vessels were in use but they were generally small and only made coastal trips. Sail remained the preferred option because 'the cost of building a steamship was more than twice that of a sailing ship of the same tonnage. [...but] carried less than half the cargo [...of the same size] sailing ship'.[614] Nevertheless, the slower speed of sail ships was an issue. On the route to India the British Army 'badly needed services [to] be both faster and [able to] adhere to a planned schedule'.[615] Before the Suez Canal was opened (1869), vessels travelling to India had to go round the Cape of Good Hope, or sail to Alexandria where troops and passengers could be transported across land to board vessels at Suez. According to Rogers, this 'overland' route played an increasingly important role between 1842 and 1869, before the Suez Canal opened. Nevertheless, it was 'not really popular, for plague was prevalent in Egypt, and even when passengers were not exposed to the risk of infection, they still

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[610] Rogers, H.C.B., *Troopships and their History* (London: Seeley, Service & Co Ltd 1963) p.77; and Your Archives, *History and Functions of The Sea Transport Services*, November 2007) <http://yourarchives.nationalarchives.gov.uk/index.php?title=History_and_Functions_of_The_Sea_Transport_Services >. [accessed 5 March 2008]
[611] Rogers p.77
[612] Ibid. p.73. See also Beckett p.134-6
[613] Temple-Patterson p.125
[614] Rogers p.86
[615] Ibid. p.81

had to spend a period of quarantine'.[616] The overland route from Alexandria to Cairo took passengers seventy-two hours and included a twelve hour stop in Cairo, with camels and donkeys transporting baggage, mail and freight, which took on average sixty-four hours.[617]

The move from sail to steam was one of two major innovations in shipbuilding during the second half of the nineteenth century; the other was the transition from wooden to iron vessels for sailing ships; steam vessels were always constructed from metal.[618] The development of steam in turn became a battle between two methods of propulsion. To distinguish the more effective method, in 1845 there were a selection of races and a 'tug-of-war' between two types of vessel: a screw-sloop (the S.S. *Rattler*) and a paddle-sloop (the S.S. *Alecto*).[619] At the time, 'the largest merchant ships afloat were now propelled by steam, but the disadvantages of paddles had prevented the conversion of any of the line-of-battle ships'.[620] With races in different weather conditions, the S.S. *Rattler* (screw-sloop propelled) won every competition.[621] Despite the result, it was a long time before all 'the great ships of the line were driven by anything but sail'.[622] In 1850, 'sailing ships outnumbered steamships by about twenty to one both in quantity and tonnage'.[623] According to Harley, this was for economic and practical reasons. For steamships, the cost per ton-mile of cargo increased with the distance of the voyage, whilst it remained constant for voyages on sail vessels.[624] This was due to the quantity of coal required to power the vessels, a consequence of which was large amounts of space set aside for fuel storage, reducing the space available for cargo or troops.[625] In the 1870s, and well into the twentieth century, vessels propelled by steam were still equipped with sails, because 'broken propeller shafts were not uncommon [...] and since most ships had single screws they would have been completely immobilised without sails'.[626] Williams and Armstrong have added that these technological advances increased the speed vessels could travel and because shipping

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[616] Ibid. p.98
[617] Ibid. p.102
[618] Harley, C.K., 'British Shipbuilding and Merchant Shipping: 1850 - 1890', *The Journal of Economic History*, vol. 30 (1970), pp.262-266, p.262
[619] Rogers p.103
[620] Ibid. p.103
[621] Ibid. p.103
[622] Ibid. p.103
[623] Ibid. p.107
[624] Harley p.263 (per ton mile means cost to carry 1 ton of cargo 1 mile)
[625] Ibid. pp.263-4
[626] Rogers p.141

companies were no longer reliant on weather conditions they could now provide a guaranteed timetable, resulting in an increased number of multi-stop voyages.[627]

Between 1825 and 1894, troops embarked at Southampton destined for various worldwide locations from the Channel Islands to India.[628] Field-Marshall Lord Roberts described leaving Southampton for India in 1852 at the beginning of his career.

> On the 20th February 1852, I set sail from Southampton with Calcutta for my destination. Steamers in those days ran to and from India but once a month, and the fleet employed was only capable of transporting some 2,400 passengers in the course of a year. [...] On landing at Alexandra [*sic*], we were hurried on board a large mastless canal boat, shaped like a Nile dahabeah. In this we were towed up the Mahmoudieh canal for ten hours.[629]

Of British troops who left from Southampton, the largest proportion was bound for India. Next, 'it was probably to Africa that most overseas movements of British troops took place during the second half of the nineteenth century'.[630] For example, in the Xhosa War, 1851, 'additional troops from the United Kingdom' were required.[631] As the P&O vessel S.S. *Singapore*, 'a new iron paddle-steamer', was leaving for India at the time, they offered to carry troops 'free of charge'.[632] The Government accepted this offer, and boarded 500 soldiers.[633] According to Rogers, 'the speed of the movement and the freedom from the hazards of adverse winds impressed the Government with the advantages of moving troops under steam'.[634]

Convinced by the screw method, P&O began changing from paddle to screw steamers, with the first ship entering service in 1851. This decision led P&O to build the S.S. *Himalaya*, a vessel that turned out to be 'too big for the traffic and operated at a loss'.[635] However, international events rescued P&O from financial disaster. When the Crimean War began, the Government took control of all steamships, and 'assumed the responsibility of arranging for their coal supply'.[636] Fortunately for P&O, the Admiralty requested to purchase the S.S. *Himalaya* as a troopship for £13,000.[637]

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[627] Williams, D. and Armstrong, J., *Changing Voyage Patterns 1820-1914: The Impact of the Steamship* (Univeristy of Greenwich: 2008) Conference paper presented at the 5th International Congress of Maritime History.
[628] The National Archives, RAIL 411/368 (1866) p.3
[629] Rogers p.107-8
[630] Ibid. p.109
[631] Ibid. p.109. The Xhosa Wars, also known as the 'Kaffir' Wars, were a series of battles between Xhosas and Boers throughout the nineteenth century.
[632] Ibid. p.109
[633] Ibid. p.109
[634] Ibid. p.109
[635] Ibid. p.105
[636] Ibid. p.117
[637] Ibid. p.106, and p.115

The outbreak of the Crimean War in 1854 'resulted in the first large scale movement of troops overseas since the introduction of steam'.[638] An initial problem was the lack of troopships that the government could acquire. Alongside the S.S. *Himalaya*, P&O provided another eleven vessels, which carried 62,000 soldiers and officers, 15,000 horses, and military stores.[639] A consequence of the purchase of these vessels was a reduction in the mail services, eventually resulting in the complete suspension of the service to Australia.[640]

A number of companies sent troopships, some of which became hospital ships, taking the injured and wounded to the British Army Hospital at Scutari.[641] A new company, the Union Steam Collier Company, sailed vessels from Southampton Docks with the 'first shipment of wooden huts to provide for the comfort of our soldiers in the East during the winter campaign in the Crimea'.[642]

The shipping conditions for troops varied greatly. In the P&O steamers 'the troops had warm and reasonably comfortable accommodation' whereas on the sailing ships 'many soldiers were carried as deck passengers [...meaning that] in cold weather they froze, and when it was rough they were battened down below on the already overcrowded troop decks'.[643] There were often facilities for officers' families. For example, in 1866 troops sailed from Jersey and Guernsey to India on steam vessels with their wives and children, at an agreed cost of between 5 and 18 shillings each.[644] Due to the length of the passage, 'many a young officer who had started the journey unattached was engaged by the time the ship reached Bombay or Madras'.[645] The trip would often involve gambling with, as one commanding officer remarked, 'large sums of money [...] won by seamen from young soldiers going out to India'.[646] Most troops leaving Southampton were reasonably comfortable, entertaining themselves in a variety of ways.

When 'the nation had hardly recovered from the struggle against Russia', in 1857 'there occurred the calamity' of the Indian Mutiny.[647] The Government sent troops to reinforce the British Army, with the first initially arriving in Simonstown, near Cape

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[638] Ibid. p.115
[639] Ibid. p.115
[640] Ibid. p.115
[641] Ibid. p.116. In modern day terms, Scutari is a suburb of Istanbul called Uskudar.
[642] Ibid. p.116, citing *Hampshire Independent* 9 December 1854, no page reference provided.
[643] Ibid. p.115
[644] TNA, RAIL 411/368 p.3
[645] Rogers p.79
[646] The National Archives Admiralty, Transport Department: Correspondence and Papers, MT 23/283 (1914) T. 714
[647] Rogers p.121-22

Town, South Africa in September 1857.[648] Most troopships sailed to Alexandria where troops disembarked and took the overland route to Suez.[649] In 1858, the new railway linking Alexandria and Suez speeded up the movement of troops and became the preferred course for overland traffic.[650]

During discussions about the construction of the Suez Canal, the British Government viewed the plan with suspicion. They 'believed the Canal would endanger British naval supremacy; for if control of the waterway between the Western and Eastern seas were in French hands, France would have a short sea route to India and the East which could be denied to Great Britain in war'.[651] Work on the Canal progressed and, when opened, it was controlled by the Suez Canal Company. However, the use of the canal by some shipping companies was at times limited and later use of the canal reflected Britain's original suspicion, in particular about Egypt's control and influence over quarantine in the area, as discussed in chapter three. For example, when James Lyle Mackay (1852-1932), the First Earl of Inchcape, sailed from Southampton to India in 1874 and the vessel arrived at Alexandria, he disembarked and travelled by rail to Suez because 'P&O were not yet making regular use of the canal owing to complications over the mail contract'.[652]

After the Crimean War, there was another change in the organisation of trooping. Suggestions were made 'that the somewhat haphazard trooping arrangements should be replaced by a regular service of Government transports'.[653] Although no action was initially taken, in 1863 the Government adopted the idea, ordering five trooping steamships.[654]

The Zulu War (1877-1879), first Boer War (1880-1881), and British occupation of Egypt in 1882 all also led to the embarkation of troops at Southampton.[655] Commercial ships were transformed into troopships with remarkable haste. The conversion of the S.S. *Pretoria* in Southampton in 1877 took only nine days.[656] In 1883, during the British occupation of Egypt

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[648] Ibid. p.121-2
[649] Ibid. p.123-4
[650] Ibid. p.134
[651] Ibid. p.137. For a recent history of the Suez Canal see Karabell, Z., *Parting the desert : the creation of the Suez Canal* (New York: A.A. Knopf, 2003)
[652] Rogers p.145
[653] Ibid. p.134
[654] Ibid. p.134
[655] Ibid. p.148
[656] Ibid. p.147

> Two eastbound ships were held at Port Said, [where] workmen were rushed on board, and as they sailed through the Suez Canal their accommodation was modified to receive 1,600 soldiers who were being sent by rail from Cairo to Suez.[657]

Between 1825 and 1893, the movement of troops from Southampton occurred alongside the commercial traffic that used the docks, with some commercial vessels such as mail-packet steamers undergoing conversion to troopships. This was known as 'normal peacetime trooping'.[658] The impact of troops on local health services will be discussed in section 5.3, though the social and financial impact troops had when they arrived in the town during this period still requires further research.

5.1.2 Premier Trooping Port: 1894–1913

Between 1894 and 1913, there was a move from employing dedicated troopships to the tendering for vessels as required, while Southampton's role developed with the port becoming the premier trooping port for England.[659] P&O were the first to secure a contract under this system for Indian trooping during the 1894/1895 season.[660] The Government considered this a more economical approach and the army were more enthusiastic about the changes as P&O ships were more comfortable and, 'unexpectedly, the health of the troops remained far better on long voyages'.[661] After the last remaining Government troopship, the S.S. *Malabar*, completed service in 1896 commercial shipping companies ran all peacetime troopships.[662]

At the same time, Southampton became Britain's 'premier military port'.[663] By 1897, the MOH observed that 'much additional responsibility has arisen by the establishment at Southampton of the Transport Service'.[664] Nevertheless, in the MOH's opinion this took place with 'perfect accord and appreciation of all concerned'.[665] The MOH for the town and port, Dr. A. Wellesley Harris, recorded his 'personal thanks for the kindness and valuable aid rendered by the gentlemen [military and port health inspectors...] without whose assistance the satisfactory medical examination of Troopships would have been impossible'.[666]

There are many plausible reasons why Southampton became the country's leading trooping port. It has been argued that the transportation of between 80,000 and

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[657] Ibid. p.152
[658] Ibid.
[659] Ibid. p.156
[660] Ibid. p.157
[661] Ibid. p.157
[662] Ibid. p.157
[663] Temple-Patterson p.173
[664] Harris, *Sixth PSA Annual Report for 1897* p.4
[665] Ibid. p.4
[666] Ibid. p.4

100,000 men during the Crimean War, 'and on a smaller scale the Zulu War of 1879 and the Egyptian campaigns of the early 1880s, had given some indication of the value of Southampton as a port of military embarkation'.[667] The extensions to the port, including the opening of the Inner dock in 1851, the Old Extensions Quay in 1875, the Empress Docks in 1890, and the development of the Itchen Quay which began in 1873 though was not finished until 1895, have been recognised as factors in the choice of Southampton as the country's most important trooping port.[668] Temple-Patterson has argued that this expansion led to the realisation of the 'possibilities of the port [...] in the loading and despatching of the transports needed for the war in South Africa'.[669] In addition, Southampton's geographical position, double tide, and the number of shipping companies based in the town may also have been influential in the Government's decision.[670]

As a base for the embarkation and disembarkation of troops at Southampton, in 1895 the War Office hired shed no. 24, by the Empress Docks currently situated in the Eastern docks, at a cost of £50 a year.[671] In 1904, it was agreed that the troopship berth would be moved to shed no. 34, on the condition that the shed was arranged 'as regards latrines etc in a similar manner to that at 24 – [and] all to be done at dock authorities [*sic*] expense'.[672] These changes did not take place until 1906.[673] When the Admiralty Transportation Officers' office did move, an additional building was erected.[674] The upkeep of these offices was the responsibility of the War Office, who had agreed 'to keep the whole of the premises in good condition'.[675] The offices were the base for trooping movements through Southampton docks.

The number of troops that passed through Southampton between 1894 and 1913 varied greatly, thus the number of military patients was always changing for the PSA. In 1898, thirty vessels arrived in Southampton carrying 26,171 troops from all over the world including Bombay, Hong Kong, Cape Town, Sierra Leone, Malta, Alexandria, Halifax (Canada), the West Indies and Mauritius.[676] The first significant use of Southampton since it gained the status of premier trooping port was the outbreak of the

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[667] Temple-Patterson p.173
[668] See Ibid. p.173 and McClutcheon, C., *Port of Southampton* (Gloucestershire: Tempus, 2005) p.7
[669] Temple-Patterson p.173
[670] The Government's reasons for choosing Southampton are not made clear in departmental or local correspondence.
[671] The National Archives Admiralty, Transport Department: Correspondence and Papers, MT 23/244 (1910)
[672] Ibid.
[673] Ibid.
[674] Ibid.
[675] Ibid.
[676] Harris, *Sixth PSA Annual Report for 1897* p.21

South African War (1899-1902) when troops left Southampton for the Cape on 29 October 1899.[677] Southampton was the 'chief port of England in connection with South African traffic' with 'daily communication by troopship'.[678] An estimated 528,000 troops and their munitions passed through the port during the South African War.[679] The local MOH was aware of the increased risks these military connections posed regarding the spread of disease. He reported that the increased movements to and from South Africa 'called for special vigilance' when an outbreak of plague occurred in 1900.[680] Although embarkation figures for troops varied annually, Southampton's role as a trooping port steadily grew, and the First World War ensured the dramatic continuation of this growth.

5.1.3 The First World War and beyond: 1914–1919

The First World War brought with it changes to employment and everyday life for the residents of Southampton, as it did for all towns and ports in Britain. 'On the eve of World War One, nearly 180,000 workers were employed on British ships; almost 300,000 were employed by British port and harbour authorities, shipowners, warehouses, and others providing services to shipping on land'.[681] However, Konvitz has argued that

> The larger significance of World War 1 in the history of ports lies in the fact that the war brought government to intervene in port affairs. The indispensable role of ports in national economies and in the movement of troops and supplies provided the justification for such intervention. Governments may have increased the degree to which they managed port operations incrementally, but the cumulative effect of their efforts radically altered the balance of power between cities and states. [...] The war, therefore, marked a decisive transition from one era in the history of port cities to another.[682]

This was the case for Southampton. At the outbreak of the First World War in August 1914, the 'Southampton docks, [were] selected by [Major General Henry] Wilson as the main embarkation point'.[683] The War Office took responsibility for the port and closed it to all commercial shipping. 'Southampton Docks [were] placed under Government Control and became No. 1 Military Embarkation Port, [with] over 7,000,000 officers and other ranks and more than 3,750,000 tons of stores dealt with'.[684] When

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[677] Rogers p.160. See also Beckett pp.138-140

[678] Harris, A. W., *Nineth Southampton Port Sanitary Authority Report for the year ended 31st December 1900, part of Annual Report on the health of Southampton* (Southampton: 1901) p.2 and p.26

[679] Temple-Patterson p.173

[680] Harris, *Nineth PSA Annual Report for 1900* p.2

[681] Konvitz pp.300-01

[682] Ibid. p.312-3

[683] Stevenson, D., 'War by Timetable? The Railway Race before 1914', *Past and Present*, vol. 162 (1999), pp. 163 - 194, p.174. Major Wilson was the War Office's Director of Military Operations after 1910.

[684] Southampton City Archives Documents Deposited by Miss Elsie Sandell; Docks, Shipping and Transport, D/S.7.1

compared to other British ports, Southampton stood alone because 'the total closing of the Port to commercial traffic was entirely due to military necessities'.[685] Ports across the country had different functions relating to the war effort, for example 'troops boarded at Southampton while frozen meat and motor transport were loaded at Liverpool, stores and supplies at New Haven, and miscellaneous units at Glasgow'.[686]

At the beginning of the First World War troops arrived in Southampton via railway, and in 'five days 1,800 special trains steamed into Southampton'.[687] It is not surprising then, that although 'Britain had one of the densest rail networks in Europe [...] the approaches to Southampton were the only significant bottleneck for military purposes'.[688] The London and South-Western Railway Company acted as 'secretary railway', handling communications with the War Office, and running up to 'seventy concentration trains a day into Southampton docks'.[689] Upon arrival, troops embarked on troopships, with up to thirteen vessels sailing to France every day; yet 'the operation went like clockwork'.[690]

The closure of the port to commercial traffic, and the War Office taking over management of the port meant significant changes in the port's organisation, including how troops embarked and disembarked. This in turn had consequences for the work of the PSA whose patients were now predominantly troops rather than the civilian passengers who previously passed through the port. The involvement of the military in the direction of the port and the focus on the war meant the PSA's approach to preventing the spread of disease would have to change.

Changes in the port ranged from the administration to logistical issues such as alternative uses for sheds and buildings originally erected for the Harbour Board and commercial shipping companies. In February 1914, the Admiralty appointed Captain H. Stansbury as the Admiralty Transport Officer for Southampton.[691] Part of the Transport Officer's role was to ensure there were enough facilities for the embarking and disembarking troops. Being a dedicated trooping port, it was 'frequently necessary for the Embarkation Commandant, [at] Southampton to carry out the erection of certain

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[685] The National Archives Admiralty, Transport Department, Correspondence and Papers, MT 23/318 (1914) T. 9754
[686] Miller, R. G., 'The Logistics of the British Expeditionary Force: 4 August to 5 September 1914', *Military Affairs*, vol. 43 (1979), pp.133-138, p.134
[687] Ibid. p.134
[688] Stevenson p.174
[689] Ibid. p.174
[690] Miller p.134
[691] TNA, MT 23/283 T.948 'Date as to when Capt Herbert Stansbury's appointment begins'

small sheds, kitchens, shelters, sentry boxes, etc. in the Docks [...as] temporary shelters'.[692]

The management changes required T. M. Williams, the Dock Manager, to cooperate fully with the Transport Office and Williams 'placed the whole resources of the Docks at [... the Transport Officer, Capt. Stansbury's] disposal ungrudgingly'.[693] The Dockmaster, Captain E. W. Harvey, became responsible for berthing and un-berthing all transports, which took place up to 40 times a day.[694] According to the Transport Department, this all took place without accident.[695] The Divisional Naval Transport Officer at Southampton reported the useful assistance of Navy personnel, and that included Lieutenant Commander F. J. H. B. Hutchinson who

> Has had complete control of Transports anchored off the Brambles and at Cowes, often numbering over fifty ships. The vessels in his charge have been most ably supervised and have always been ready for service when required at short notice.[696]

Alongside changes in dock management, arrangements for embarking troops altered on 27 November 1914 to ensure the voyage to Le Havre took place 'during the dark hours'.[697] Transports had to leave Southampton by 5pm, meaning troops had to arrive in Southampton by 4pm.[698] In 1915, these arrangements changed again. From 17 April 1915, troops arrived in Southampton no later than 3pm for transportation at 6pm.[699] It had been decided that

> In view of the increased daylight hours, it has been arranged that transports for [Le] Havre and Rouen shall leave Southampton in daylight arriving off [Le] Havre in darkness and conversely slow transports returning from [Le] Havre should leave that port in darkness in view of the more extended defence on the English side.[700]

As a result, 'the latest hour at which troops should arrive at Southampton in the winter months will be fixed at 6pm, of the day of embarkation instead of at 3pm'.[701] In December 1914, the transport officer requested 'at least one week's notice before more than four transports are required simultaneously'.[702] He reported that at the time there were '17 ships [undergoing] fittings, ballasting or coaling in the Docks; and a further

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[692] The National Archives Admiralty, Transport Department: Correspondence and Papers, MT 23/694 (1916), T.101577
[693] The National Archives Admiralty, Transport Department: Correspondence and Papers, MT 23/329 (1914) T. 14819
[694] Ibid. T. 14819
[695] Ibid. T. 14819
[696] Ibid. T. 14819
[697] Ibid. T. 14508
[698] Ibid. T. 14508
[699] The National Archives Admiralty, Transport Department: Correspondence and Papers, MT 23/369 (1915) T.13892
[700] Ibid. T.13892
[701] Ibid. T.13892
[702] The National Archives Admiralty, Transport Department: Correspondence and Papers, MT 23/337 (1914) T. 17433 29 Dec 1914

twenty ships awaiting an opportunity to do so'.[703] He noted that it was impossible for this to take place efficiently 'unless the above notice can be given'.[704]

One man remembered the atmosphere of the port during embarkation and disembarkation of troops, horses, vehicles and supplies, noting that

> Of course during the First World War it was very very busy, it was very busy with transports and ammunition ships and God knows what else. You 'ad about half a dozen ships who were doing nothing else but carrying horses across. [...] you 'ad a convoy went away every night, there was a convoy of ships [...] the slower ones used to start off early and then the fast ones, what we called the flyers that were takin' the troops across, that was the fast small fast turbine ships and one or two paddle ships, they used to go, go away later, that was between 10 and midnight and the last one that sailed always at two o'clock in the mornin' was the hospital ship and they were mainly requisitioned railway boats, Great Western Railway ships and that sort of thing and the St Andrews, St Pauls, St David.[705]

Although this is the recollection of a man looking back eighty years, his memories correspond accurately with the local and national records showing what trooping entailed.

The embarkation process changed again to ensure that horses, guns and troops were carried on separate vessels. For this reason 'Horses, vehicles etc. should of course arrive earlier in the day', something another local man recalled.[706]

> We used to watch at least 12 to 14 troop ships go out every night, loaded with men and big ships with the guns and ammunition [...] Halfway through the war they discovered it would be better to send all horses in one ship, guns in another, and ammunition in another and they found by doing that it was more economical because if you go and lose the men and the ammunition and the horses and guns all at once you were a losing perhaps an army who'd set out, so they used to send the men separate, and the horses separate and the guns separate and get it all organised in France.

The closure of the port to commercial traffic not only had an impact on the management and organisation of the port, but it also had implications on the port's financial situation. There was the complete loss of commercial revenue, the loss of shipping companies based in the town, and the postponement of all building work in the port, all of which would have ensured the maintenance and development of the docks.[707] This also had a significant impact on employment in the town, as the shipping industry and shipping companies based there were some of the town's main industries.

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[703] Ibid. T. 17433 29 Dec 1914
[704] Ibid. T. 17433 29 Dec 1914
[705] Transcript, (Anon.) 'World War 1 Transports' Southampton City Council Oral History Unit (ID.19426), *PortCities: Southampton: Southampton Speaks*
< http://www.plimsoll.org/resources/SCCOralHistory/19426.asp > [accessed Sept 17 2007] Sound recordings are also available on the website, along with the transcript
[706] TNA, MT 23/369 T.13892
[707] TNA, MT 23/318 T. 9754 28 September 1914.

As early as October 1914, 'there was no doubt as to the heavy loss sustained by the Harbour Board in this crisis, and there would appear to be a strong claim for compensation by Government as the loss was sustained for the good of the nation'.[708] The energy with which the town and port authorities applied for compensation and the amount they requested reflect the negative impact on the town of the port's closure to commercial traffic. When compensation was applied for, the main concern for government officials was that where 'all access for shipping to and from the Ports of Bo'ness and Grangemouth above the Forth Bridge has been prohibited,' and where 'Grimsby, Hull, Lowestoft and other ports [...had been] "hit" by the war', similar claims for compensation may be made.[709] There were concerns that this case was setting a 'dangerous precedent'.[710] Despite these concerns, the authorities recognised Southampton's case as unique because the closure of the port 'was entirely due to military necessities'.[711]

As part of the negotiations for compensation, it was argued that it was only fair for the Harbour Board to 'be put in the same position financially as if their port had not been interfered with by the transport arrangements'.[712] Any compensation received was to be based on a 'Government guarantee of profits, based on the scale of last year's receipts, for the period during which the Government took control of the Docks' using average import and export figures alongside an agreed percentage falling.[713] Payments for most years proceeded smoothly, totalling annually between £5,000 and £18,000, as shown in Table 5.1.

Year	Amount	Date Paid
1914	£5,000	30/07/15
1915	£5,000	18/11/15
	£10,000	27/06/16
1916	£5,000	09/12/16
	£12,500	21/05/17
1917	£5,000	29/09/17
	£13,000	07/05/18
1918	£5,000	09/11/18

Table 5.1 Compensation received 1914-1918.[714]

The 1918 payment was on the condition that 'no other payment is made by Government Departments in respect of use of the Port during that period'.[715]

[708] Ibid. T. 9754
[709] Ibid. T. 9754
[710] Ibid. T. 9754
[711] Ibid. T. 9754
[712] Ibid. T. 9754
[713] Ibid. T. 9754
[714] The National Archives Treasury: Supply Department, Registered FIles, T 161/28 (1918 - 1922)T. 42547

Nevertheless, in April 1919 Southampton's town and port authorities sent requests to the Treasury for an increase in the compensation to be paid, as

> After crediting the £5000 paid [...] the accounts show [...] the deficiency for the year £3685. 2. 11.: - [Yet,] the pre war year 1913 showed a surplus of £8958. 12. 7. and was stated by you to be the basis for calculating the amount of compensation, this comparison shows the additional amount payable for the year 1918 to be £12643. 15. 6.[716]

Southampton Harbour Board continued to ask the Treasury for money, requesting early payment and adding that during 1918 3,243 transports arrived in Southampton, for which ordinary dues would have amounted to £30,373 4s 2d.[717] In June 1919, a payment of £12,000 was agreed. As part of these negotiations, the Treasury said they would 'inquire whether Lords Commissioners of the Admiralty are in a position to state when the Harbour can be restored to commercial use'.[718] Despite this agreement, payments were not made and in July 1919 the Southampton authorities made further enquiries.[719] The delay was due to indecision over which government department should finance the compensation. The Admiralty informed the Treasury 'they consider that the compensation payable to the Harbour Board would be more properly chargeable to War Office or Ministry of Shipping votes than to Navy votes'.[720] Although the port was closed to commercial traffic, they added that during 1919

> At the end of June last the following steps had been taken to open the port for commercial purpose:
>
> On the 21st April berths 35 to 40 at Southampton were surrendered for general commercial use.
>
> On the 8th June berths 24, 25, 30, 31, 32 and 33 at Southampton were surrendered for commercial use and berths 26 and 27 were handed back to the London and South Western Railway Company for Cross-Channel Trooping work.[721]

It was finally suggested that advances would 'fall upon the funds of the Ministry of Shipping, subject to recovery from other Departments of any sums which may be chargeable against them under general arrangements'.[722] However, the Ministry of Shipping questioned 'whether any part of this sum will be recovered from other Departments'.[723]

The matter of compensation remained unresolved, and in September 1919, the Southampton Harbour Board requested a payment of £4000, and reminded 'their

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[715] Ibid. T. 41284
[716] Ibid. T. 17638
[717] Ibid. T. 17638
[718] Ibid. T. 17638
[719] Ibid. T. 31962
[720] Ibid. T. 31962
[721] Ibid. T. 36151
[722] Ibid. T. 42547
[723] Ibid. T. 42547

Lordships that the Board has not yet received settlement for the balance of last year'.[724] After this request, government officials of the Treasury concluded that

> the payments already made to the Harbour Board are fully justified, [...and] although the port will be used to a considerable extent during the present year by Transports, the interference with its earning capacity since 1919 due to such use will not justify further payments to the Board.[725]

Even as the port reopened in 1919, Southampton Harbour Board informed the Admiralty of the losses in commercial traffic, noting that 'the large shipping companies have not returned to the port and state they cannot do so until satisfied that they can carry on their business with reasonable facility, and without fear of hasty removal'.[726] However, at the end of the war the port 'gradually re-opened to ordinary commercial traffic, and by the end of the year [1919] many of the old Shipping Companies had recommenced the regular sailing of vessels from the Port'.[727] As before 1914, local authorities such as the Harbour Board managed the port and commercial traffic arrived alongside military traffic as Southampton remained the 'chief port in connection with Military operations carried out in all parts of the world'.[728]

Although Southampton initially suffered financially, and during the war years commercial shipping companies left Southampton, other aspects and businesses of the town were able to flourish, taking advantage of the war. For local residents the first major visual change to the town was the presence of the large number of troops arriving at the beginning of the war. For one man this became a clear memory.

> Coming into Southampton you've got the main street to the dock [...] you've got St Mary's street, then of course you had the road round the shore. On the first three days of the War, the First World War, those three streets were a never ending line of troops, I don't think there was a break in the line, they were goin' all night.[729]

Another remembered that the whole port came alive

> Everything was all of a bustle, [...] I mean the first thing as you come into the dock, you see masses and masses of people for a start, and there'd be trains crossing the road, boat trains and goods trains coming in and out, there'd be all sorts of noise and there'd be ships blowing their whistles, and there'd be stevedores right left and centre, there'd be coal people unloading coal on various ships, and there'd be troop

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[724] Ibid. T. 40823
[725] Ibid. T. 43832
[726] TNA, MT 23/318 T. 9754 28 September 1914.
[727] Lauder, R. E., *Annual Report on the health of Southampton for the year ended 31st December 1919* (Southampton: 1920) p.112
[728] Ibid. p.112
[729] Transcript, (Anon.) 'World War 1 Troops' Southampton City Council Oral History Unit (ID.19427), *PortCities: Southampton: Southampton Speaks*
< http://www.plimsoll.org/resources/SCCOralHistory/19427.asp > [accessed Sept 17 2007] Sound recordings are available on the website, along with the transcript.

> ships [,] there would be Lascars in and out and you know the dock was absolutely bustling, it was alive.[730]

The arrival of over five million embarking troops between August 1914 and November 1918 left a lasting impression on the local population.[731] In the first three months, official records show the following embarked at Southampton.

Type	Number
Officers	14,704
Men	344,713
Horses	93,019
Guns	704
Vehicles	11,606
Ambulances	40
Bicycles	3,528
Tons of Stores	24,609
Motors	776

Table 5.2 Persons and Resources embarked at Southampton 1914.[732]

These figures included 47,083 territorial soldiers and 3,249 horses destined for Gibraltar, Malta, Egypt and India.[733] By the end of the war, the total number of troops that had embarked and disembarked at Southampton was just over seven million (Table 5.3). Southampton was 'the last "real" space these soldiers saw before going to the hardly imaginable horrors of the Western Front'.[734] The troops and various cargoes embarked on a huge number of vessels which were loaded and unloaded in Southampton (Table 5.4).

	Embarked	Disembarked	Total
Personnel	4,848,643	2,288,144	7,136,797
Horses and Mules	799,287	22,873	822,160
Guns and Limbers	7,489	5,914	13,403
Vehicles of all kind	150,492	3,318	153,810
M.F.O. Parcels and Mail bags	7,266,492	170,742	7,436,916
Stores, Ammunition (tons)	3,285,450	95,824	3,381,274

Table 5.3 Embarkation and Disembarkation figures for Southampton, 1914–1919.[735]

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[730] Transcript, (Anon.) 'Description of the Docks' Southampton City Council Oral History Unit (ID.19461), *PortCities: Southampton: Southampton Speaks*
< http://www.plimsoll.org/resources/SCCOralHistory/19461.asp > [accessed Sept 17 2007] Sound recordings are also available on the website, along with the transcript.
Stevedores is from Spanish and Portuguese, meaning men who stuff, used by sailors to mean men who load ships. Lascars means an Indian Sailor.

[731] Lauder p.113. SCA, D/S.7.1 notes that in the Second World War, 'Southampton again became one of the principal military ports and dealt with approximately 4,300,000 personnel and 3,900,000 tons of military stores and equipment'.

[732] TNA, MT 23/329 T. 14819

[733] Ibid. T. 14819

[734] Hammond, M., 'Southampton, the Great War and the cinema', in *Southampton: Gateway to the British Empire*, ed. by Taylor, M. (London: I. B. Tauris, 2007) pp. 149-166p.150

[735] Lauder p.113

	Loaded	Unloaded
Transports	6,135	2,153
Store-ships	2,786	418
Hospital (ships)	366	2,631
Furlough[736]	503	669
Total	9,790	5,871

Table 5.4 Vessels loaded and unloaded at Southampton, 1914–1919. [737]

On a practical level, the initial impact of the port's closure to commercial traffic was a 'trade depression and local unemployment'.[738] As Hammond has remarked, 'this situation was soon alleviated, however, by the influx of troops and related industries'.[739] Although Hammond focuses on the impact on cinema businesses, other industries that were alleviated by the influx of troops would have included public houses. In addition, the presence of troops resulted in 'khaki fever' in many towns, with many women 'so attracted to men in military uniform that they behaved in immodest and even dangerous ways'.[740]

For local businesses, the arrival of these troops, and their return as wounded soldiers was an opportunity not to be missed. Alongside the opening of large numbers of cinemas in the town, one manager, Mr. George Elliot, who managed the Northam Picturedome in 1914 and 1915, and the Carlton from 1915, 'entertained Belgian soldiers with cigarettes and chocolate'.[741] According to Hammond, Elliot recalled, 'though some of the Belgians were seriously wounded they seemed to enjoy thoroughly the programme and the reception they received'.[742] Elliot also introduced Tuesdays as a free day for wounded soldiers, which Hammond argues 'courted the favour of the community through his use of charity and free shows'.[743]

This good marketing extended further to include using the war itself to increase business, for example the 'cinema rifle range' where the 'public were invited to get their own in against the Germans!'. Hammond observes that 'the methods of taking advantage of the war to increase business for exhibitors were numerous, and Southampton exhibitors were in line with practices elsewhere in the country'.[744]

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[736] A furlough is leave of absence for a soldier. Reference to furlough as a vessel during the First World War most likely indicates passenger ferries used to bring home soldiers on leave. Nicholas Rodger, email message, 29 February 2008.
[737] Lauder p.113
[738] Temple-Patterson p.178, and Hammond p.152
[739] Hammond p.152
[740] Woollacott, A., "Khaki Fever' and Its Control: Gender, Class, Age and Sexual Morality on the British Homefront in the First World War', *Journal of Contemporary History*, vol. 29 (1994), 325-347, p.325
[741] Hammond p.156
[742] Ibid. p.156
[743] Ibid. pp.156-7
[744] Ibid. p.157

In addition to troops, there were large numbers of crew present in the town. The Transport Officer noted in 1914 the need to provide crews with a 'leave of absence as they have to be kept in constant readiness, thereby causing discontent and increasing the difficulty of obtaining crews'.[745] The same request was made again in 1915, noting that not allowing leave may be 'seriously detrimental to the service'.[746] On 15 January, however, the tone changed; it was reported that it was 'a common occurrence for the men to go ashore and not return on board until after the ship is due to sail'.[747] This was a problem for the transport service as 'many of [...the crew] are in such a state of intoxication that they are unfit to perform their duties'.[748] In this sense, public houses and breweries in the region benefitted greatly. Although venereal diseases are not examined here, it could also be assumed that there was an increase in cases of prostitution.

The war and arrival of troops influenced Southampton in a variety of ways. The closure of the port to commercial traffic led to changes in the port's organisation, financial situation, and caused temporary local unemployment. Southampton's status as chief embarkation port saw an increase in troops passing through the port and town, leaving vivid memories with local people and the opportunity for local businesses, such as cinemas, public houses and brothels to take advantage of the additional consumers present in a town taking the 'semblance of a military camp'.[749] While the troops were abroad, Hammond notes that 'the soldiers return here [to Southampton] as ghostly images flickering on the cinema screen' in newsreels.[750] The troops returning to Southampton had the most impact on the local authorities' practices in place to prevent the spread of disease.

5.2. Disembarkation of troops

The effect of war on the health of the troops, for example mental health on return, has been studied.[751] Research has also looked at disease among the military population whilst at war. Yet the influence of troops returning home on local health and local authorities' practices to protect health has not been explored. This is surprising as the return of troops often involved the movement of large numbers of people, posing a greater risk to the town at specific times.

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[745] TNA, MT 23/337 T. 17433 29 Dec 1914
[746] Ibid. T. 17433 29 Dec 1914
[747] The National Archives Admiralty, Transport Department: Correspondence and Papers, MT 23/339 (1915), 15 January 1915
[748] Ibid. 15 January 1915
[749] Temple-Patterson p.178
[750] Hammond p.150
[751] See for example Reznick

In 1944, Lieut. Col. O. R. McCoy, the Director of Tropical Disease Division of Preventive Medicine Service for the Office of the Surgeon General in the U.S. Army noted that 'disease prevention, always a major factor in military operations, now must include protections from all maladies that thrive in warm climates'.[752] Richard Evans notes that 'war and combat brought huge numbers of men together in cramped and confined conditions, [... with] rudimentary forms of sanitation'.[753] He refers for example to the 'greatest smallpox epidemic in nineteenth century Europe' when 'troops were demobilised at the end of the Franco-Prussian War in 1871'.[754] Smallman-Raynor and Cliff, in their extensive 2004 analysis of the history of war epidemics, argue that 'down the ages, war epidemics have decimated the fighting strength of armies, caused the suspension and cancellation of military operations, and have brought havoc to the civil populations of belligerent and non-belligerent states alike'.[755]

Smallman-Raynor and Cliff stated that factors affecting the spread of disease and epidemics during war are well documented, and include 'a broad range of social, physical, psychological and environmental considerations'.[756] They identify the need to explore this further, stating that 'the heightened mixing of both military and civil populations [...increases] the likelihood of the transmission of infectious disease'.[757] In addition, 'the combatants may be drawn from a variety of epidemiological backgrounds, they may be assembled and deployed in disease environments to which they are not acclimatized'.[758] They also provide an extensive discussion on mortality and morbidity amongst civil populations during, what they term, modern war. They conclude that

> The historical impact of war upon disease in civil populations appears clear. With the breakdown of normal standards of hygiene, the frequent collapse of medical care, and the mass population movements that accompany war, the great infections of history [...that] are strictly controlled in peacetime rapidly re-establish themselves as major killers.[759]

Their work focuses on the theatre of war placing emphasis on the movement of civil populations, rather than the impact of military movements in non-conflict zones, for example at point of disembarkation when returning home. This is something Evans acknowledges as a possible point of transmission, stating that disease could be passed

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[752] McCoy p.535 McCoy was on leave from School of Medicine and Dentistry at the University of Rochester, New York. Although in the U.S. Army his view can still be seen as valid as it is reflected in other historical sources.
[753] Evans, 'Epidemics' p.133
[754] Ibid. p.133
[755] Smallman-Raynor and Cliff p.4
[756] Ibid. p.4
[757] Ibid. p.4
[758] Ibid. pp.4-5
[759] Ibid. p.174

from military to civilian populations by a variety of means 'through the occupation of towns, through the billeting of troops, through the return of conscripts to their homes after cessation of hostilities'.[760] There is often mention of the large number of military hospitalisations at home and abroad relating to venereal disease and the wounded, but no examination has been presented into how infectious diseases could affect the hospital policies and health practices, such as the measures adopted by PSAs.[761]

Reznick examines the hospital treatment soldiers received during and after the First World War.[762] From a cultural perspective, he explores the use of voluntary aid (in particular YMCA) rest huts, military hospitals, military convalescent facilities and 'hospitals set aside uniquely for the rehabilitation of disabled men', but omits the link between civil and military.[763] Although very thorough in his examination of the care soldiers received when they returned home, the treatment of soldiers suffering from infectious diseases and their treatment in local non-military hospitals is not explored.[764]

The transfer of disease from troops arriving in port towns throughout the period of conflict is not addressed in Evans' specific list, or Smallman-Raynor and Cliff's introduction. The impact of the presence of military patients in civil institutions on civilian health care, such as overcrowding or hospital accommodation problems, is not assessed. Looking at Southampton it is clear that some military personnel received treatment in local non-military hospitals. By examining these hospitals in detail, it is possible to show whether troops passed disease to the local population and in doing so provide a further dimension to the study of treatment and care of soldiers during war. Using statistics and annual health reports the following sections will begin to explore the treatment of military personnel in non-military hospitals focusing on Southampton.

Considering the importance placed on the link between war and epidemics, and the research done in this area, it is surprising that port prophylactic measures have not been developed as part of the history of trooping, the history of port or public health or the history of war and epidemics. An examination of how soldiers were removed from transports when they returned to Britain, and where they were treated, not only develops the understanding of the transportation of soldiers and their treatment, but it also shows the impact these had on public and port health, and thus the civilian population. A chronological discussion in this section shows the development of disembarkation

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[760] Evans, 'Epidemics' p.133
[761] Smallman-Raynor and Cliff p.182
[762] Reznick p.2
[763] Ibid. p.2
[764] Ibid.

procedures, where soldiers were treated and more specifically considers the impact of troops on local health services.

5.2.1 Disembarkation: 1825–1893

Details on the disembarkation of troops between 1825 and 1893 are rare. However, letters between Transport and Commanding officers in the Indian Troop Service, in Bombay, indicate that in 1871 nineteen invalid soldiers and two 'time expired soldiers' were sent back to Southampton on a Mail Steamer.[765] It is unclear if, or where, they were hospitalised. The number of troops returning to Southampton gradually increased, in line with the increasing number of troops that embarked at Southampton. When patients were removed from vessels, such as those returning in 1871, they were sent to both military and civil hospitals. In Southampton there was the Isolation Hospital (at West Quay until 1900 and then at Mousehole Lane), the Floating Hospitals (or Hospital Ships), the Royal South Hampshire (RSH) Infirmary and the Workhouse Infirmary. There was also the Royal Victoria Military Hospital that provided for military personnel and during the First World War the Hartley College buildings and various camps that were set up across the town. [766]

Details of how troops disembarked before 1893 are incomplete. Although quarantine regulations excluded war ships, they did not exclude troopships (ships used solely to transport troops). Quarantine remained in practice in England and Wales up to 1896, and thus the quarantine laws applied to disembarkation of troops. As the quarantine regulations did not identify troops as a separate population, they were treated in the same way as other passengers during this period. The ship's surgeon on board the troopship would confirm any cases of sickness. Government regulations in 1858 stated that

> The surgeon or medical officer in charge of troops and sick on board transports shall, during the voyage, keep a constant oversight over the ventilation and cleanliness of the ship, [...] water-closets [...] the bilge [... and] all other matters likely to affect injuriously the health of the troops or sick.[767]

In addition to this, 'at every port where troops or sick are embarked, the Principal Medical Officer or Senior Medical officer shall inspect every transport ship', and 'the

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[765] The National Archives Admiralty, Transport Department: Correspondence and Papers, MT 23/25 (1871) A figure of 99, then 101, was given. However later correspondence corrected this to 19. 'Time-expired' refers to soldiers who have reached the end of their period of service.

[766] Details of the development of these hospitals and their admission policies have been explored in chapter 4.

[767] The National Archives War Office, WO 33/6A (1858)

vessel and the state of health of the men on board [...to] ascertain what casualties have occurred during the passage'.[768] The regulations also noted that

> Medical Officers are [...] to take medical care of, and if necessary, to receive into General or Regimental Hospitals, any Soldiers or Sailors who may be on Sick Furlough, or too far detached from their respective Regiments or Ships to be attended by their own Medical Officers. Soldiers or Sailors, whilst absent on Ordinary Furlough, are entitled to Medical treatment at the public expense.[769]

Due to the lack of sources relating to Southampton in this period, it is not possible to comment on the disembarkation of troops in Southampton.

5.2.2 Disembarkation and removal of patients: 1894–1913

When Southampton became a primary trooping port for Britain in 1894, 'the joint inspection of Military and Municipal representatives [... was] established'.[770] This was meant to ensure 'the satisfactory medical examination of Troopships'.[771] Though not stated explicitly, this may indicate that the MOH of Southampton considered the previous situation unsatisfactory.

After these inspections, orderlies working in the port removed any troops identified as sick or injured. The patients were stretchered off the vessels to railways or sheds in docks before transportation to both civilian and military hospitals. Even though patients heading for the Royal Victoria Military Hospital at Netley could see the hospital from the troopship as they passed it en route to Southampton, they still disembarked at the Southampton docks. Upon disembarkation, invalids were moved 'quickly out of the ships into roomy covered sheds, and from these into specially warmed carriages' at the Empress Dock.[772] In view of the troops' roundabout route, a suggestion was made in January 1899 that invalids destined for the Royal Victoria Military Hospital should be removed in Southampton Water rather than Southampton Docks, similar to the practice used to remove smallpox patients. For example, in 1898 a soldier who arrived on the S.S. *Dilwara* infected with smallpox 'was removed into the Port Steam Ambulance off Netley for isolation'.[773] In the same year, other smallpox patients on the troopship S.S. *Jelunga* 'were removed off Netley to the Floating Hospital'.[774] It was argued that 'if

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[768] Ibid. pp.76-8
[769] Ibid. p.76
[770] Harris, *Sixth PSA Annual Report for 1897* p.4
[771] Ibid. p.4
[772] The National Archives Admiralty, Transport Department: Correspondence and Papers, MT 23/102 (1899), and The National Archives Admiralty, Transport Department: Correspondence and Papers, MT 23/151 (1902) T. 10293.
[773] Harris, *Seventh PSA Annual Report for 1898* , p. 15. Note: the S.S. *Dilwara* was 'the first ship to have bunks for other ranks [...] and this has been the standard practice in all troopships built as such ever since'. Cited from Rogers , p.182
[774] Harris, *Seventh PSA Annual Report for 1898* p. 17

a proper pier is created and a suitable hospital tug or boat provided, so that the invalids may be under cover [at Netley], the suggestion could be "complied with"'.[775] Initially officials raised various concerns about this matter. Firstly, the exposed anchorage in those parts of Southampton Water, especially during the winter trooping season, could mean delays of up to four hours in fine weather preventing same day disembarkation for the troops.[776] Secondly, the current facilities allowed quick disembarkation to warmed carriages, whilst the suggested pier would not.[777] No final decision was made, yet throughout the period up to 1919, some invalids were removed off the shore at Netley.

When the troopships arrived in Southampton, the Transport Officer had to complete a disembarkation report as a record of the number of troops and goods received. These reports often noted the length of time it took to disembark the troops. For example, in 1902 the S.S. *Tagus*, a Royal Mail Steam Ship returning from Cape Town, took two days to disembark its troops.[778] The timing and speed of disembarkation became a more prominent issue after 1914. The disembarkation report provided the local Transport Office with information on the number of troops and crew, any incidents of sickness, the state of the ship, any delays, and whether the troops and their families had been treated well by the Master (including the supply of 'good water').[779] When the Transport Officer received early information on 'the arrival at Southampton of Naval Invalids from abroad' he was ordered 'to forward them to their own ports, except in those cases in which the nearest hospital be a necessity' and submit a report to the Transport Department.[780] Thus military patients in some potentially urgent cases were sent to non-military hospitals.

A disembarkation report for the *S.S. Tagus* in 1914 provided some suggestions for improvement from a doctor from the Army Medical Corp. It was recommended that 'an operating table of a similar pattern as is scheduled for [...] a field ambulance' be supplied; enamel baths be installed as currently 'the paint comes off the first time the steam is turned on'; and, extracts of 'cannabis indica, sodi sulphas, ammon bromide' be made available in the ship's hospital.[781] Although the Admiralty identified which private

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[775] TNA, MT 23/102
[776] Ibid.
[777] Ibid.
[778] TNA, MT 23/151 T. 10293
[779] The National Archives Admiralty, Transport Department: Correspondence and Papers, MT 23/266 (1912)18 March 1903 and TNA, MT 23/283 T. 714
[780] TNA, MT 23/266 18 March 1903
[781] TNA, MT 23/283 , T. 714
According to the *Handbook of Useful Drugs, 1913*, Sodii sulphas was used saline cathartic, whilst other variants such as Sodii sulphis were used to treat skin diseases such as scabies, and Sodii thiosulphas was used to treat ringworm and parasitic skin diseases. (see http://chestofbooks.com/health/materia-medica-

vessels should be troopships, they had no responsibility for the equipment supplied on board, in this case supplies for the ship's hospital. This illustrates that there were many different authorities involved in the organisation of trooping.

Even though the reports recorded any troops experiencing illness during the voyage, it is not stated whether they disembarked at Southampton with illness (infectious disease or wounded). For example, the S.S. *Sunda*, of the P&O Steam Navigation Company, arrived in September 1902 reporting twenty cases of 'Itch', and four deaths from pneumonia.[782] The S.S. *Tagus* recorded the disembarkation of 1300 troops, two nursing staff, 47 officers and six warrant officers, with no cases of sickness between Cape Town and Southampton. In neither case is it recorded what treatment was provide and where. The introduction of disembarkation reports does show that between 1894 and 1913 the disembarkation process was formalised, including a written report to allow the swift and comfortable removal of patients from vessel to hospital. Details on the hospitalisation of these patients are discussed in section 5.3.

5.2.3 The 'depressing part': disembarking the returning troops, 1914–1919

Unlike records for previous periods, those relating to the First World War and following years provide detailed information on how troops were disembarked when they returned to Southampton. The return of wounded troops was distressing for local people. One man recalled that

> The most depressing part of it always was to be night time and see so many men going out all singing and cheering and really enjoying themselves and the next morning you were dealt with hospital ships coming back then, loaded with wounded.[783]

These troops started to return to Britain, via Southampton, very soon after the war began. The War Office reported that between the outbreak of the war 28 July 1914 and 29 November 1914, out of 70,087 'in-effectives' who returned to Britain, the largest

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drugs/American-Medical-Association/A-Handbook-of-Useful-Drugs/index.html accessed on 10 December 2007).
Ammonium Bromide was used as a sedative. (see *Online Medical Dictionary* http://cancerweb.ncl.ac.uk/cgi-bin/omd?ammonium+bromide accessed on 10 December 2007)
Cannabis indica – was used as a sedative and to reduce convulsions. However its medicinal use was being questioned at this time. See Mills, J. H., *Cannabis Britannica: Empire, Trade, and Prohibition 1800-1928* (Oxford: Oxford University Press, 2003) for a history of cannabis and the British Empire during this period.

[782] TNA, MT 23/283 T. 714. The 'Itch' is a common name for Scabies.

[783] Transcript, (Anon.) 'World War 1 Hospital and Troop Ships' Southampton City Council Oral History Unit (ID.19425), *PortCities: Southampton: Southampton Speaks* < http://www.plimsoll.org/resources/SCCOralHistory/19425.asp > [accessed Sept 17 2007] Sound recordings are available on the website, along with the transcript.

proportion, 93.5% (totalling 65,588), disembarked at Southampton.[784] In total, the following disembarked at Southampton, as shown in Table 5.5.

Type	Number
Officers and Men	16,294
Horses	1621
Guns	8
Vehicles	183
Tons of Stores	3,567
'In-effectives'	
Prisoners of War	4,746
British Wounded	49,025
Belgian Wounded	8,625
Indian Wounded	1,852
German Wounded	1,340

Table 5.5 Troops and resources disembarked at Southampton, 28 July - 29 November 1914.[785]

At the port of Southampton, from the outbreak of war to December 1916, 2,395,531 personnel were embarked, 371,612 disembarked, and 629,108 disembarked as sick or wounded.[786] This equated to 4,428 ships involved in embarkation, and 2,885 involved in disembarkation, giving a daily average of 3,900 personnel passing through the port via eight vessels.[787] On 24 November 1916, the 10,000th special troop-train ran into Southampton Docks.[788]

These returning troops had an immediate impact on Southampton. Bowser, a Voluntary Aid Detachment (VAD) worker, remarked in 1917 that when the 'Belgian wounded and refugees poured in to England, Southampton was the main landing place, and helpers were needed to feed the poor hungry people'. She noted that 'for some time a canteen was run in the docks [...and people would] distribute chocolate and cigarettes to the Belgian soldiers'.[789]

When troopships arrived for disembarkation, as in pre-war years, the Transport Officer completed a voyage report. However, even with additional military staff assisting the inspection of disembarking troops, 'owing to the large number of vessels using the port it was not possible to visit all of them, and no record could be obtained as to the number of crews and passengers on some', leaving the port at further risk.[790]

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[784] TNA, MT 23/329 T. 14819
[785] Ibid. T. 14819
[786] The National Archives Admiralty, Transport Department: Correspondence and Papers, MT 23/761 (1917) T. 26916
[787] Ibid. T. 26916
[788] Ibid. T. 26916
[789] Bowser pp.45-6
[790] Lauder, R. E., *Southampton Port Sanitary Authority Report for the year ended 31st December 1916, part of Annual Report on the health of Southampton* (Southampton: 1917), p.124

In 1917, Bowser recalled that in one hospital ship

> The great saloon, [...] now accommodates row upon row of beds, whilst the steerage, cleaned and whitened in true ward-fashion, is a mass of beds in symmetrical lines. There are lifts from deck to deck, and every contrivance has been thought of so that the patients may be moved comfortably and quickly.[791]

She went on to describe how the orderlies 'get the men ready for removal, the doctors and sisters, of course, have done the dressing, and then there come aboard stretcher-bearer parties who take the patients off the ship and put them in the warm sheds on the berth or in the hospital train'.[792] The patients were removed at either Southampton Docks or agreed piers off Southampton Water by the stretcher bearers who were also from VADs, with many originally being 'members of a Red Cross Detachment'.[793] Bowser recalled that the 'gangway from ship to berth is covered in so that the patients are never for a moment in the open'.[794]

Moving patients off vessels was a labour intensive and time-consuming task. This was not a problem for the last years of the nineteenth or even the first decade of the twentieth century when the number of troops passing through Southampton was not significant. But, with the outbreak of war, the need to remove patients in a speedy manner became an issue. It was recorded that in 1902 it took two days to disembark troops. Yet in November 1914, seven vessels due to disembark troops from India at Devonport were diverted to Southampton where disembarkation was quicker.[795] In order to facilitate disembarkation Lieutenant C. H. Withers of the First London Field Ambulance proposed an alternative method of removing patients from vessels, which, he claimed, would require considerably fewer orderlies than were currently used to carry patients on stretchers.[796] He suggested that a pulley system could be used to lower patients on stretchers off the vessels with two or three personnel monitoring their removal, one on shore and one or two on the vessel, rather than numerous people carrying patients off on stretchers. It is unclear when, or to whom, he first made this suggestion. However, in 1914 the Admiralty employed him 'to superintend the construction of his apparatus for embarking and disembarking wounded'.[797] In November 1914, he was 'lent to the Admiralty and placed under the orders of the

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[791] Bowser p.44
[792] Ibid. p.44
[793] Ibid. p.45
[794] Ibid. p.45
[795] The National Archives Admiralty, Transport Department: Correspondence and Papers, MT 23/449 (1915), T.54928
[796] The National Archives Admiralty, Transport Department: Correspondence and Papers, MT 23/403 (1915) T. 13871/1914
[797] Ibid. T. 13871/1914

Divisional Naval Transport Officer'.[798] The War Office requested additional opinions from the Director of Transport on the apparatus, noting that their own doctors were in favour 'but it would cost a good deal'.[799] The Transport Department and War Office agreed that it would be worthwhile to test the proposal, and granted permission to trial the apparatus at Southampton.[800]

J. I. Thornycroft & Co., a shipbuilding company, was 'asked to make the appliance, as they have already furnished an estimate'; though early correspondence provided no estimated cost or delivery time.[801] J. I. Thornycroft & Co. sub-contracted some of the development and construction work, reporting that they impressed upon the sub-contractors 'the urgency of this matter'.[802] They also commented that

> We can assure you that we accepted this small ropeway principally on account of it being for the Admiralty. We have other work in hand of urgent National importance, and owing to the time occupied in designing this small plant it has considerably interfered with some.[803]

Although J. I. Thornycroft & Co. believed there were more pressing matters, the Admiralty obviously saw the potential benefits of this apparatus.

Due to delays in the construction of the appliance, Withers returned to military service, which for him was at the First London Clearing Hospital, as part of the Royal Army Medical Corps, Territorial Force.[804] In January 1915, work was well underway and by June, the apparatus was ready for testing. Once tested, initial thoughts were that it would not be wise to put the equipment into use, but it was considered that Southampton officials should produce a report including the opinions of the Military Medical Officers before a final decision could be made.[805] A report from Southampton's Admiralty Transport Office noted that:

> The new method had the following advantage:
>
> Greater comfort and freedom from jolts during the journey of 160 feet from the deck to the train.
>
> The disadvantage, from the point of view of a badly wounded man is that, though the traveller (mechanical) is perfectly safe, it does not look so, and would tend to frighten anyone in a low state of health....
>
> Much time would be lost in preparing for disembarkation by this means, if it was necessary to get the wounded ashore in a hurry, - on account of tide, darkness coming on, threatening weather, or another ship to disembark.

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[798] Ibid. T. 13871/1914
[799] Ibid. T. 13871/1914
[800] Ibid. T. 23856/1914
[801] Ibid. T. 23856/1914
[802] Ibid. T. 775/1915
[803] Ibid. T. 775/1915
[804] Ibid. T. 775/1915
[805] Ibid. T. 9763/1915

> Should protection from the weather be required while the patient is passing along the 50 foot brow, [806] it would entail large alterations to the existing means of shelter from sun or rain.
>
> In my opinion I do not consider the adoption of this apparatus would be of any advantage other than the freedom from jolting to the occupant of the stretcher, and I cannot recommend it for the use for which it is designed. [807]

Many other people did not view the use of this apparatus favourably. Firstly, it was observed that there would be nowhere to mount the shore fixings on the shed at Empress Docks, Southampton. Secondly, at Le Havre the vessels were boarded on the starboard side but on the port side in Southampton, thus requiring additional or mobile equipment. Thirdly, the trial had not taken account of differing weather or sea conditions; and finally, existing fittings on the transports would hamper the removal of patients using the aerial ropeway.[808] Once the trial was complete, the Admiralty concluded that 'the adoption of the method would be costly and would not lead to any appreciable reduction in establishment'.[809]

In July 1915, Withers wrote to the Principal Naval Officer in Southampton about the trial, noting that with a few modifications, the new method could be beneficial.[810] The Admiralty informed him that they would not 'waste any more public money' on modifications and they 'had no use for his apparatus'.[811] Though this idea was unsuccessful it is clear that the government was serious about removing patients quickly to enable the fast turnaround of troopships.

5.3. Troops, hospitals and diseases: The impact on local health

Once troops disembarked, they were transferred to Netley or other local hospitals for treatment. Thus, they posed a risk to the health of the town both in terms of the possibility of spreading disease and in occupying the town's medical facilities. This section examines if there was any increase in particular diseases that could be attributed to the presence of troops, and what implications their arrival had on local health practices and the facilities available to Southampton's population.

The hospital records for Southampton provide some indication of where troops were isolated, but exact details on individual patients or the diseases that were treated are not always available. The main source of statistics is the Annual Medical Officer of Health Reports, which were published from 1873. However, only post-1883 reports have

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[806] A brow is a simple gangway from the vessel to the dockside.
[807] TNA, MT 23/403 T. 9763/1915
[808] Ibid. T. 9763/1915
[809] Ibid. T. 24988/1915
[810] Ibid. T. 9763
[811] Ibid. T. 9763

been retained and even these are not available for all years. The amount of detailed information increases in later years, but is dependent on the individual Medical Officer of Health's particular concerns. After 1900, these reports begin to provide significantly more detailed feedback on the health of the town and port, including specific incidents.

In the case of the Royal South Hampshire (RSH) infirmary and the Royal Victoria Military Hospital, patients' records and reports on patient intakes are very limited.[812] Southampton's monthly council minutes refer to military hospitals but only generically, whilst Annual Health Reports on the borough and Port make very little reference to any cases transferred to military hospitals. This means that the analysis provided here is based on the borough and port annual health reports, and qualitative information is derived from the statements of the MOH, rather than from the military or voluntary hospital records, meaning some conclusions have been reached on limited case studies. With these caveats in mind, this section will nevertheless provide some insight into the impact of troops on local health facilities and practices. Ideally, a study of each hospital's in take records would enable a comparison between military and non-military hospital treatment, and would further our understanding of the relationship between the local PSA and public health services in Southampton during the time of war. Nevertheless, the annual reports and monthly council minutes provide enough information to examine diseases notified in the borough, diseases that arrived at the Port, some details of specific cases in the isolation hospital, and, for some years, the proportion of patients sent to military hospitals. From these it is possible to draw some conclusions on the pressure military patients placed on civilian health facilities.

A further limitation when considering these reports is that diseases were not classified consistently. As shown in earlier chapters, the ideas of contagion and disease causation developed over the nineteenth century. As theories changed, diseases were categorised differently. Currie's examination of fever hospitals and fever nurses summarises these developments.

> Infectious diseases were clearly different, but most continued to be known generically as fever diseases until the mid-nineteenth century; for instance, it was not until 1855 that diphtheria and scarlet fever were recognised as different conditions. In the 1870s, some doctors were still using the term "typhus" to describe all types of fever. To avoid confusion, the term 'enteric' was frequently employed from the mid-1870s, instead of typhoid, as it sounded so similar to typhus.[813]

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[812] Hampshire County Council, *Royal Victoria Country Park: Site History* 2007) <http://www3.hants.gov.uk/hampshire-countryside/rvcp/history-rvcp.htm>. [accessed 06 January 2008]

[813] Currie, M., *Fever hospitals and fever nurses : a British social history of fever nursing : a national service* (London; New York: Routledge, 2005) pp.3-4

Thus, caution must be exercised when comparing disease categories. Another problem is that at different times, different diseases were notifiable. The Infectious Disease (Notification) Act, 1889, dictated which diseases were reported upon arrival at the port and across the town. The act covered

> small-pox, cholera, diphtheria, membranous croup, erysipelas, the disease known as scarlatina or scarlet fever, and the fevers known by any of the following names, typhus, typhoid, enteric, relapsing, continued, or puerperal, and includes as respects any particular district any infectious disease to which this Act has been applied.[814]

With regards to vessels, the act clearly stated 'this Act shall apply to every ship, vessel, boat, tent, van, shed, or similar structure used for human habitation, in like manner as nearly as may be as if it were a building'.[815]

Mooney observes however that 'compulsory notification remained optional in the provinces until further legislation was passed in 1899'.[816] The Infectious Diseases (Notification) Act, 1899 stated the previous Act, of 1889, would 'extend to and take effect in every urban, rural, and port sanitary district, [...] in England or Wales, whether that Act has or has not been adopted therein before the commencement of this Act'.[817] This means that the diseases reported to the MOH were not necessarily the *only* diseases arriving at the port. Patients could arrive with non-notifiable diseases and potentially spread the disease across the town. Equally, when vessels arrived in port they had to provide notification of all sickness occurring during the voyage, including patients removed at previous ports, and no clear distinction was made between patients landed at Southampton and those landed previously.

5.3.1 Hospitals 1825–1893

As shown in chapter four, at the beginning of the period there was a lack of formal hospital accommodation in Southampton. In 1844, the RSH Infirmary opened as a voluntarily run institution supported by commercial shipping companies.[818] For military patients the Royal Victoria Military Hospital opened at Netley in 1863. Snippets of information show that the hospital also looked after convalescent patients, but that by 1868 'it will not be found practicable to keep Convalescents in Hospital in time of war'.[819] In 1868, the hospital treated 240 patients with infectious diseases.[820] By 1870,

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[814] Infectious Disease (Notification) Act, 1889 (52 & 53 Vict. c. 72) section 6
[815] Ibid. section 13
[816] Mooney, G., 'Public Health versus Private Practice: The Contested Development of Compulsory Infectious Disease Notification in Late Nineteenth Century Britain.' *Bulletin of the History of Medicine*, vol. 73 (1999), 238-267, p.246
[817] Infectious Diseases (Notification) Extension Act, 1899 (62 & 63 Vict. c.8) section 2
[818] Watson p.21
[819] TNA, WO 32/6828 p.10

the capacity of the hospital was reportedly '1,000 beds, or more and fully occupied with sick and invalids'.[821] One report by the hospital management noted patient numbers for 1880, 1881 and 1882.

Year	Remaining 1 Jan	Admitted	Died	Invalided	Discharged to duty	Transferred to Deport	Remaining 31 Dec
1880	205	3140	31	1597	1385	1	331
1881	331	3136	48	1242	1766	2	409
1882	409	3730	42	989	2333*	8	738

* includes one man who escaped.

Table 5.6 Admissions to the Royal Victoria Military Hospital, 1880-1882. [822]

Of those admitted to the hospital, the percentage categorised as invalided decreased from 50% in 1880 to 26% in 1882. Although the report does not specify why these soldiers were admitted it can be assumed it was due to wounds rather than infectious disease. In 1893, the Royal Victoria Military Hospital treated two cases of smallpox that arrived on the S.S. *Scott.* Most military patients suffering from infectious disease were admitted to a local isolation hospital for treatment. Details of patient numbers are limited for this period, so it has not been possible to establish where different patients were transferred before 1894.

It is important to clarify that the examination here is of those military patients transferred to non-military hospitals with infectious diseases. Many of those arriving with wounds received treatment at military hospitals.

5.3.2 Hospitals and their patients 1894–1913

The records available for the period after 1894 when Southampton became the primary trooping port in England show more detail than before on patients admitted to hospitals in Southampton. The most detailed reports date from the time of a plague outbreak in Bombay, which led to a case arriving in Southampton in 1897. At the time, troops were being transported to India, so it is clear why a plague epidemic, which had been the 'leading cause of death [in Bombay] for two decades' raised concern in Southampton.[823] Dr. A. Wellesley-Harris, MOH for the town and port had previously recognised the risk posed to Southampton by the movement of troops to and from Bombay. He wrote in his 1896 annual report that

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[820] Ibid. p.10

[821] Ibid. Report of a committee assembled by Order of the Right, Hon. the Sec, of State for War [...] dated 13 July 1870 to consider the Organisation of Military Hospitals p.10

[822] Ibid.

[823] Klein, I., 'Urban Development and Death: Bombay City, 1870 - 1914 ', *Modern Asian Studies*, vol. 20 (1986), pp. 725 - 754, p.744. The severity of this plague epidemic in Bombay is discussed in detail in Klein's article as noted above.

> At present, the arrival of troops from Bombay is one of serious moment to us, owing to the prevalence of Plague we have to guard not only our own interests and health, but we are bound to adopt measures to prevent the importation of the disease through our Port to Inland towns.[824]

In 1897, of thirteen troop vessels that Southampton received, ten were from Bombay carrying 10,771 troops. The problems in Bombay became an important issue for Southampton's PSA. It was noted that

> If we were to consider merchant vessels alone there would be little anxiety as far as this Port is concerned as we have no regular lines trading between Bombay and Southampton. Within recent years, however, we have become an important trooping station and in consequence have during the season (which is eight months in the year), frequent communication by transport vessels bringing home soldiers from Plague infected districts. These vessels carry usually between twelve and thirteen hundred troops, and a crew exceeding one hundred and fifty, many of whom are Lascars.[825]

Specifically, there were concerns over the 'power of medical inspection the Port Medical Officer might have over the crew, [and that] a similar examination of the troops would be surrounded by technical difficulties'.[826] The PMO believed that it would be 'impossible [...] without very serious delay to make any effectual examination single-handed'.[827] In February, Harris remarked on the difficulty of carrying out this examination on the S.S. *Dilwara* from India as the captain 'refused to stop for some considerable time'.[828] As a result, Harris requested the distribution of a leaflet stating the plague, cholera and yellow fever regulations to masters and pilots.[829] This leaflet noted that the PMO (Harris) would issue a fine of £100 if vessels from Indian ports did not stop off the shore at Netley for examination.[830] The LGB reviewed these extra duties for guarding the port in February 1897. While considering the arrangements satisfactory, they did add that

> *re* Plague, Southampton [is] running special risks from Troopships coming from Bombay; these ships convey so large a number of persons in reduced health, also Lascar crews, that make the risks far greater than ordinary passenger ships. It is also advisable that vessels coming from Colombo, and through Suez canal, be inspected.[831]

A case of plague arrived on the S.S. *Dilwara* on the 6 April 1897. On visiting the vessel, Harris was notified that one death from plague had occurred on 18 March whilst in the Red Sea. In conjunction with the military authorities, Harris agreed to 'hold a

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[824] Harris, *Fifth PSA Annual Report for 1896* p.32
[825] Harris, *Sixth PSA Annual Report for 1897* p.18 Lascar is an Indian Sailor
[826] Ibid. p.18-19
[827] Ibid. p.18-19
[828] Minutes and Proceedings (1897) 3 February 1897, p.398
[829] Ibid. 3 February 1897, pp.398-9 3 Feb 1897
[830] Ibid. 3 February 1897, pp.398-9
[831] Ibid. 3 Feb 1897, p.401

conference with the Medical Staff on board, including the Ship's Surgeon' to obtain full details of the case.[832]

The medical staff, including the ship's surgeon, reported that a child, who had been ill as the vessel left Bombay on the 11 March, died on 18 March. Whilst sick, the child was isolated in the women's hospital on the ship and upon the child's death the troop-deck and women's hospital were disinfected. The vessel was quarantined on arrival in Suez for six days, and for the entire voyage 'medical staff had kept a systematic inspection of the troops, women, and children'.[833] It was agreed that as 'troops could not be disembarked under any circumstances until Wednesday morning, and it being at that time dark, all persons on board should be mustered and inspected as soon after daybreak as practicable'.[834] All the women and children were moved to the Floating Hospital while their belongings underwent disinfection.[835] As part of normal practice, the infected portions of the ship were disinfected and fumigated.[836] The PSA made available additional facilities for forty men, women and children, which incurred an additional cost of £12 7s 6d.[837]

As well as illustrating the process used to prevent the spread of plague, this case also presents the earliest specific details on the transfer of disembarking troops to local hospitals. The 245 invalid troops on board the S.S. *Dilwara* disembarked the vessel at the pier by the Royal Victoria Military Hospital, Netley.[838] Details about their treatment or length of stay are not available. It has also not been possible to ascertain whether they were classed as 'invalid' because of war wounds or infectious disease. With the continued presence of plague in Bombay, Harris noted in the PSA 1898 report that

> the arrival of Troops from India has been a special cause of anxiety owing to the presence of Plague at Bombay. Each of Her Majesty's Transport Ships arriving with Troops from the infected district, has been boarded off Netley by your Port Medical Officer, in conjunction with the Naval and Military Representatives.[839]

The continued prevalence of plague meant all troopships had to undergo medical inspections. This happened thoroughly and effectively, with the assistance of Navy and Military personnel. The MOH noted that 'no cases were imported into this District and the greatest care was exercised by those in charge of the vessels and troops to prevent an

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[832] Harris, *Sixth PSA Annual Report for 1897* p.19
[833] Ibid. p.20
[834] Ibid. p.20
[835] Ibid. p.21
[836] Ibid. p.21
[837] Ibid. p.22
[838] Ibid. pp.21-22
[839] Harris, *Seventh PSA Annual Report for 1898* p.4

outbreak during the voyage'.[840] He added that this had been 'greatly facilitated by the Naval and Military Officers responsible for the disembarkation of troops at this Port'.[841]

By 1902, the Resident Transport Officer in Bombay organised the embarking of returning troops and personnel, and led the landing of troops in Bombay.[842] This meant that the spread of plague was being controlled both at point of arrival and departure in Bombay, and at point of arrival in Southampton. It is reasonable to conclude that at this time the measures in place to prevent the spread of plague were successful.

Port health data between 1902 and 1910 is limited, however, PSA and MOH annual reports from 1914 onwards make comparisons between the current and previous years' data. Details of the diseases notified upon arrival in port and across the borough of Southampton are available from 1911. Chapter four discussed civilian cases arriving in the port.

In 1911, eleven smallpox patients were notified to the port, whilst in 1912, five were notified at the port, followed by two reports in the town. Of the 1912 incidents, one smallpox patient was removed from the transport vessel H.T. *Dongola* to the hospital ship, and ten days later a steward from the vessel developed smallpox after returning to his home in Portswood Road. [843] The second patient was also removed to the hospital ship.[844]

It is clear that during the last years of the nineteenth and first years of the twentieth centuries, concern emerged about a particular disease: plague. These concerns were legitimate as the outbreak of plague in Bombay killed thousands, at a time when Southampton had regular troop and mail streamer contact with the Indian port.[845] A variety of port health measures were put in place by the PSA and military authorities. Additional medical inspection of troops arriving in Southampton took place alongside the PSA's normal practices. A number of measures including the presence of Transport Officers in Bombay monitoring embarkation and disembarkation, disinfection onboard ship, and the use of quarantine in places such as the Suez Canal (the main route to and from India at this time) all helped in preventing the spread of the disease. During this period, only one incident of plague was reported in Southampton, and the disease did not spread. Thus, the prevention measures used were effective.

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[840] Ibid. p.20
[841] Ibid. p.20
[842] The National Archives Admiralty, Transport Department; Correspondence and Papers, MT 23/153 (1902), T. 11709
[843] Hartley Library (Cope Collection) Minutes and Proceedings of Council and Committees, (1912), 4 April 1912 p.572
[844] Ibid. 4 April 1912, p.572
[845] See Klein for details on the Bombay epidemic.

5.3.3 Hospitals, patients and their diseases: 1914-1919

Between 1914 and 1919, it was not possible for the authorities to provide detailed annual reports. Each PSA annual report included a similar paragraph to that published in the 1916 report.

> The Port of Southampton continued throughout the year of 1916 to be practically closed to all commercial traffic. Statistics to the number, tonnage, and passengers and crew of vessels entering the port are not officially available; nor is it possible to publish any detailed information on the infectious diseases landed.[846]

Such disclaimers pose obvious problems for historians analysing medical statistics.[847] Nevertheless, other resources allow this period to be studied in detail. The post-war MOH annual reports for the borough provide the most detail for the period 1914-1919. However, it is important to remember the limits to the information available, in particular the lack of hospital records for the Royal Victoria Military Hospital. As the port was closed to commercial traffic, the patients reported to the MOH were only military personnel or ships' crew members.

At the beginning of the First World War, the Local Government Board reminded all local authorities of 'the great importance of maintaining the efficiency of the sanitary service of the country at this present time'.[848] They added specifically that 'it is essential that there should be no relaxation of the activities of Local Authorities in the prevention and control of epidemic diseases'.[849] In the first year of the war, it is possible to see in Southampton the change in types of diseases and the large increase in the number of cases notified to the authorities upon arrival in the port.

During the pre-war years, for example 1911–1913 (see Figure 5.1), cases notified from the borough consistently outweighed those reported from the port. However, when the First World War began this changed very quickly. There was a significant increase in the number of diseases arriving at the port between 1915 and 1919, (Figure 5.2) initially with enteric fever and pulmonary tuberculosis being most prevalent. The increase in troops arriving with pulmonary tuberculosis may be associated with the gas attacks that were first used in Ypres, France in April 1915.[850] In 1917 it was observed that symptoms of gas attacks included 'some form of bronchitis and cough', and in 1918 'shortness of

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[846] Lauder, *PSA Annual Report for 1916* p.123

[847] This is highlighted also in Johnson, N. P. A. S., 'The overshawdowed killer: influenza in Britain in 1918-19', in *The Spanish Influenza Pandemic of 1918 -19*, ed. by Phillips, H. and Killingray, D. (New York: Routledge, 2003) pp. 132 - 155, p.134

[848] Minutes and Proceedings (1915) , 6 May 1915, p.492

[849] Ibid. 6 May 1915, p.492

[850] Sturdy, S., "War as Experiment. Physiology, innovation and administration in Britain, 1914 – 1918: The case of Chemical Warfare", in *War, Medicine and Modernity* ed. by Cooter *et al* (Stroud: Sutton, 1998) pp.65- 84, p. 65

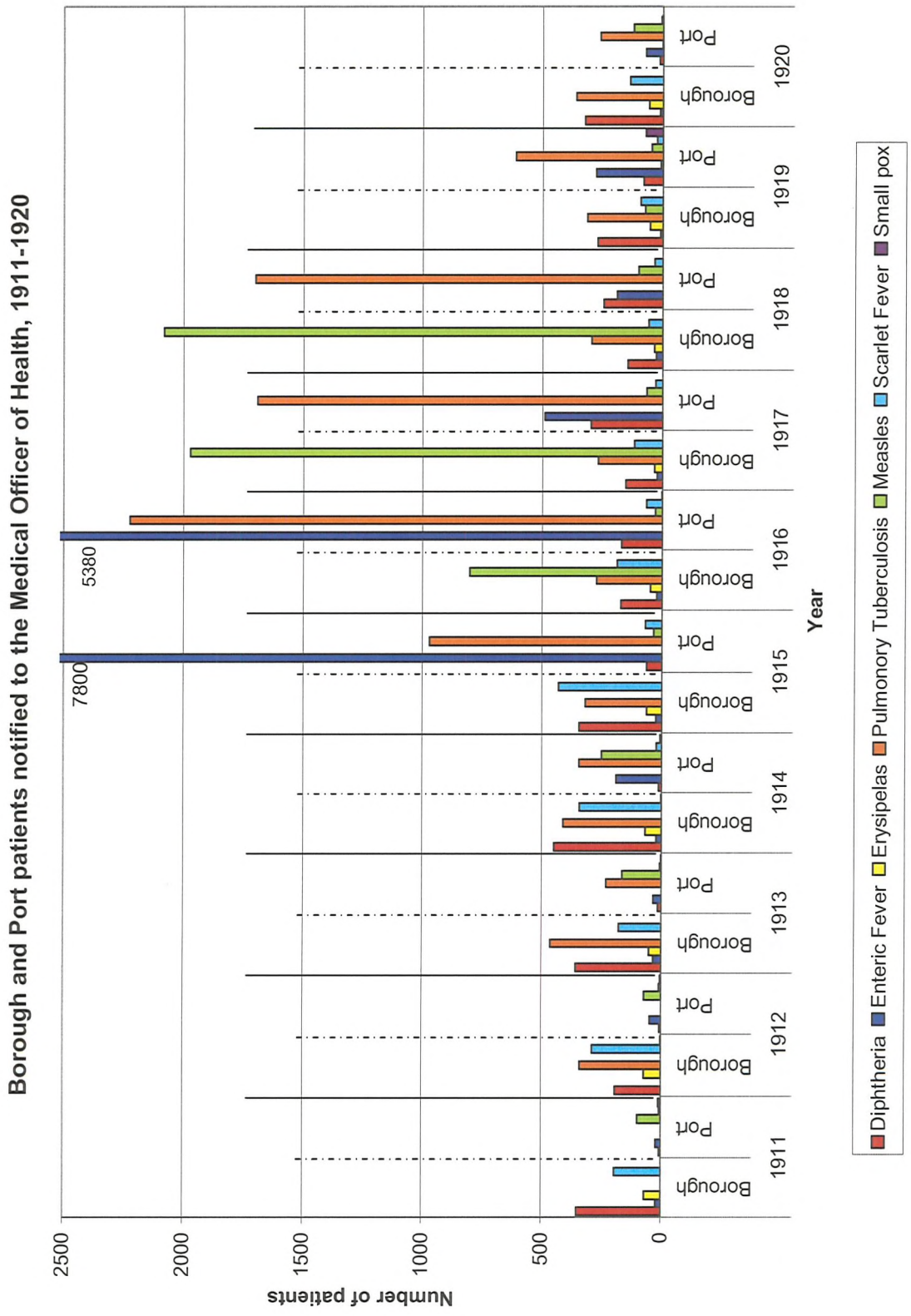

Figure 5.1 Borough and Port patients notified to the Medical Officer of Health, 1911-1920. [851]

[851] This graph has been collated from data provided in, Lauder, R. E., *Annual Report on the Health of the County Borough of Southampton and the Port of Southampton for the year ended 31st December 1920*

breath, cough, tachycardia and chest pain [were identified] as residual symptoms'.[852] As well as being the symptoms of pulmonary tuberculosis, there was speculation that these attacks 'triggered latent tuberculosis'.[853] However, recent research has indicated that 'the relationship between gas poisoning and subsequent respiratory disorder was far from clear-cut'.[854] The apparent increase in reports from the borough of measles is due to the LGB's introduction of measles notification in 1916.[855] The general increase in the number of patients and diseases arriving at the port between can clearly be associated with the First World War, as in 1920 the pre-war pattern was restored with the borough reporting more cases than the port (Figure 5.2). Actually, in 1919 there were the beginnings of a return to pre-war trends, but the larger proportion of diseases was still arriving via the port; this can be accounted for by the large number of troops returning to Britain after the war.

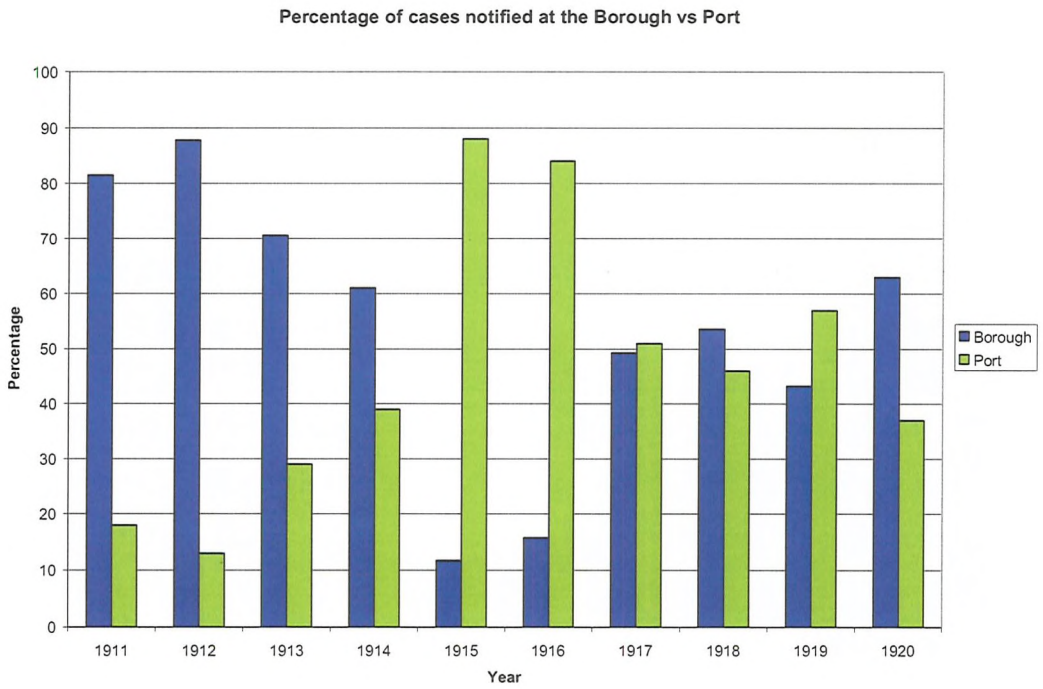

Figure 5.2 Percentage of cases notified at the Brough vs. Port, 1911–1920

(Southampton: 1921) p.129 and in Annual Medical Officer of Health Reports between 1915 and 1920, recorded in tables under Incidence of Notifiable Infectious Diseases.

[852] Jones, E., *et al.*, 'Psychological effects of chemical weapons: a follow-up study of First World War veterans', *Psychological Medicine*, vol. 38 (2008), 1419-1426 p.1419

[853] Ibid. p.1420

[854] Ibid. p.1420

[855] , 'The Notification of Measles', *The Journal of Laryngology Rhinology and Otology*, vol. 31 (1916), 273-275

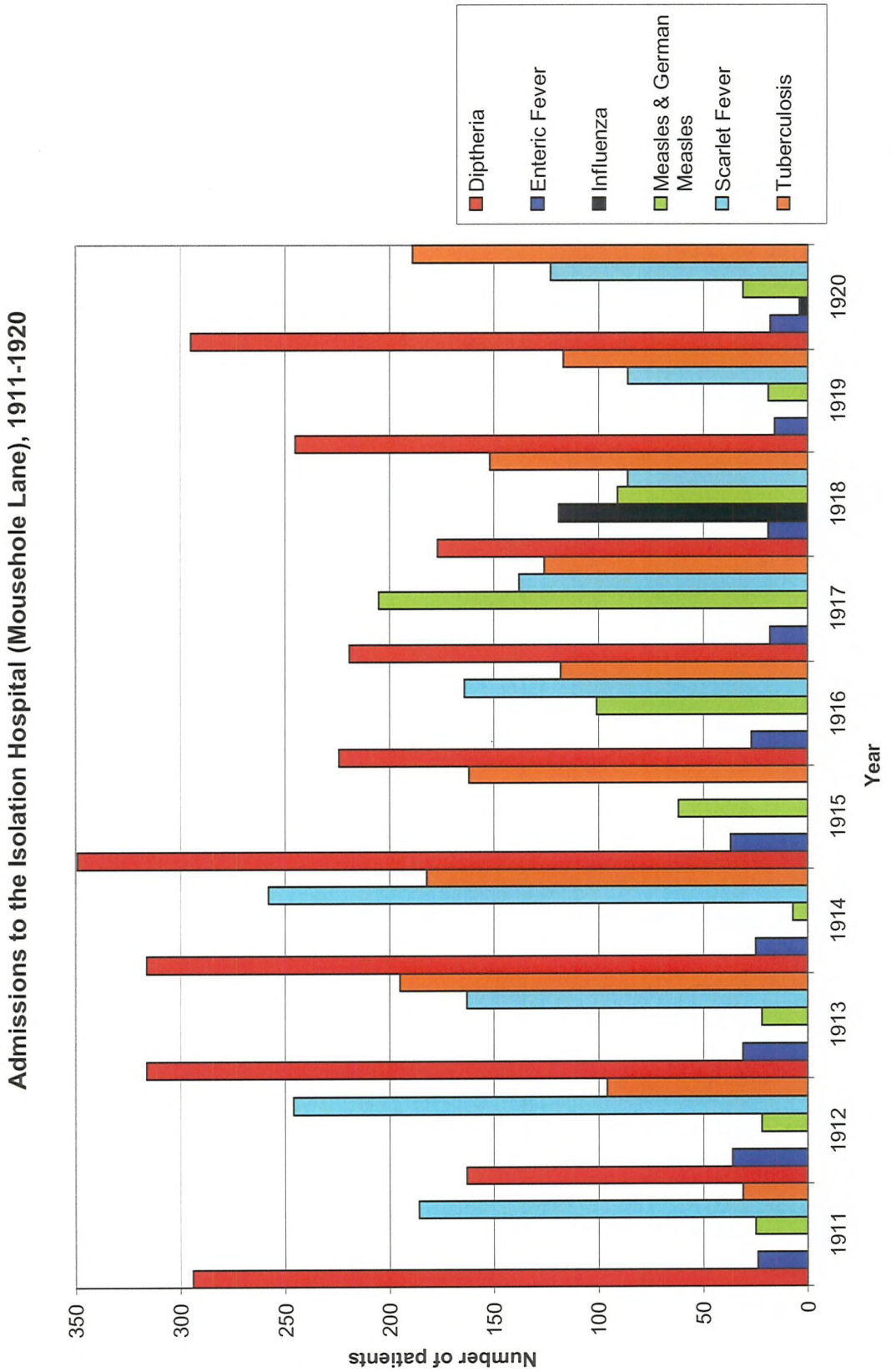

Figure 5.3 Admissions to the Isolation Hospital (Mousehole Lane), 1911-1920.[856]

[856] This graph has been collated from data provided in Lauder, *Annual Report for Borough and Port, 1920* p.67.

Comparison of Figure 5.1 and Figure 5.3 indicates that only a small proportion of both borough and port cases were hospitalised at the Isolation Hospital (by now this was the larger hospital situated at Mousehole Lane). This may be explained by a number of reasons. Some patients may have been treated in other local facilities such as the RSH Infirmary, for which admission data is not available, or at home; some patients notified to the MOH may already have died.

The highest number of cases admitted to the isolation hospital for a single disease was the 350 diphtheria patients in 1915, whilst 7,800 people (crew and troops) arrived in the port with enteric fever but only 31 were hospitalised at the local Isolation Hospital, (

Figure 5.3).[857] Although at this time knowledge of enteric fever had progressed, medical statistics did not always make clear distinctions between different fevers, such as typhoid and typhus. During this period, and in relation to troops, the cases reported as enteric fever were possibly typhoid fever, a disease considered 'an ancient enemy of soldiers'.[858] The arrival of large numbers of troops accounts for the sharp increase in enteric fever cases. In 1916, 2,222 cases of pulmonary tuberculosis and 5,530 cases of enteric fever were notified to the port, but only 118 pulmonary tuberculosis and 27 enteric fever patients were isolated. Bowser's account on VAD work at the docks during the First World War indicates a plausible reason for the difference between the notification and hospital admission figures. Bowser recalled that 'as far as possible all patients are sent to hospitals near their homes; this entails a lot of work but gives great joy to the men'.[859]

The sources consulted did not indicate where all troops were sent after the port was notified of cases of disease. However, in 1919 and 1920, 74% and 55% respectively of those arriving at the port were convalescent or did not proceed to hospital (14,754 in 1919, and 1,238 in 1920. Figure 5.4). Local military hospitals, including the Royal Victoria Military Hospital and military camps based in the town, accommodated 25% (1919) and 33% (1920) of the troops arriving at the port. The local borough hospitals accommodated less than 5% of troops arriving in the port, which would have been mainly infectious disease patients.

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[857] Lauder, R. E., *Southampton Port Sanitary Authority Report for the year ended 31st December 1915, part of Annual Report on the health of Southampton* (Southampton: 1916)
[858] Hume, E. E., 'Contributions of the Medical Corps of the Army to the Public Health Laboratory', *Science*, vol. 97 (1943), 293-300, p.294
[859] Bowser p.45

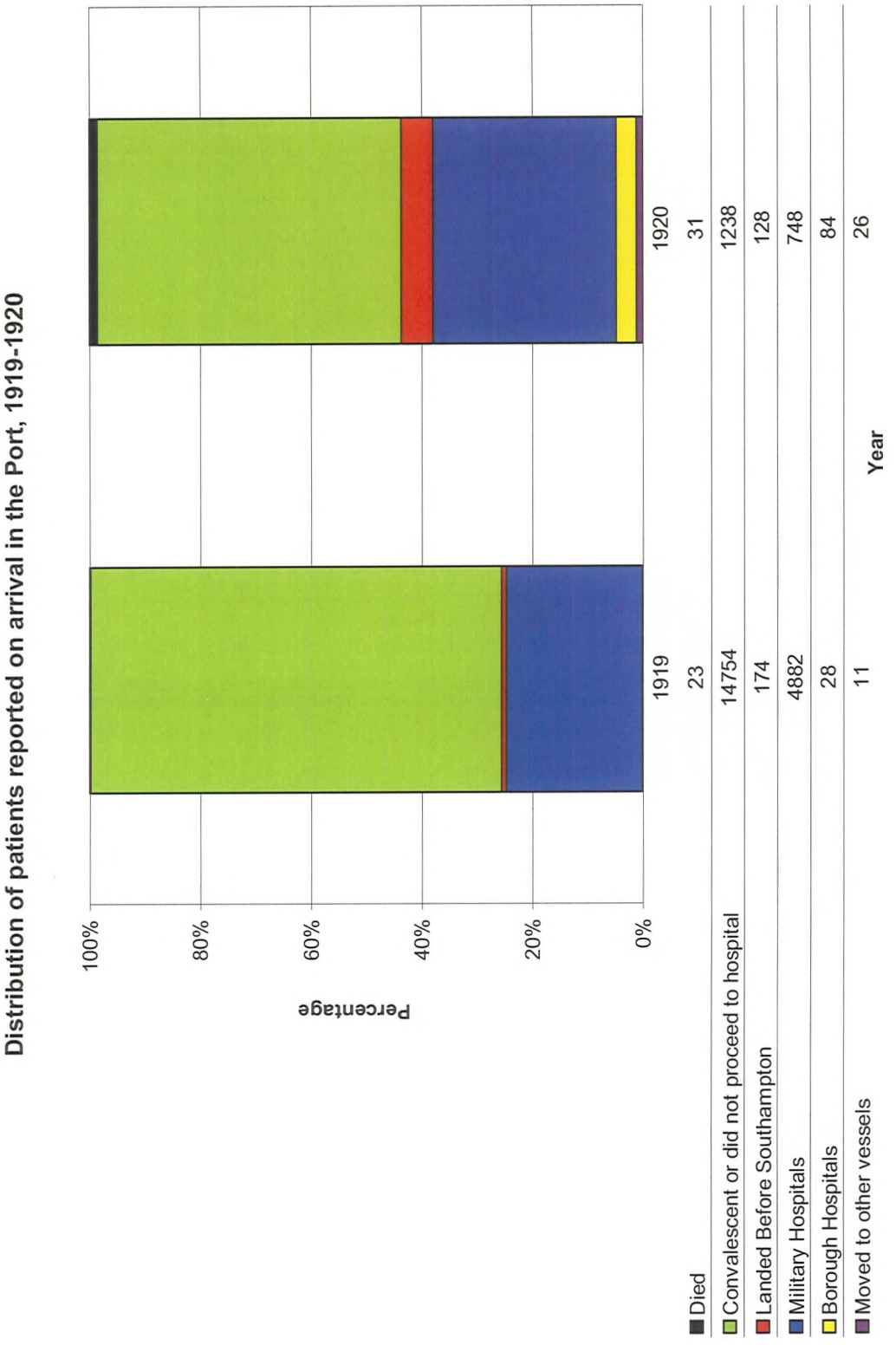

Figure 5.4 Distribution of patients reported on arrival at the Port, 1919-1920.[860]

[860] This graph is collated from data produced in Table F: Infectious and Contagious Diseases in Lauder, R. E., *Southampton Port Sanitary Authority Report for the year ended 31st December 1919, part of Annual Report on the health of Southampton* (Southampton: 1920) and Lauder, *Annual Report for Borough and Port, 1920*

According to Bowser's account there was also a 'small Detention Hospital close to the berths of the hospital ships'.[861] It was 'staffed by the Southampton Detachment of the British Red Cross Society' and used when 'patients have to be kept in the docks for several hours'.[862] These are the only references to such a hospital. It is most likely that one of the sheds was converted to a hospital, as Bowser described 'a wooden structure with several rooms in it, and in peace time it was used for very unwarlike purposes'.[863] Its close proximity to the docks was an advantage, and it was 'nearly always full'.[864] In addition to this, a 'clearing hospital' was used for the walking wounded, and many troops were placed on the hospital trains.[865]

The evidence indicates that military hospitals treated most troops arriving in the port, and troops that were treated in Southampton (at the isolation hospital or RSH) were normally only infectious cases. However, this does not account for all infectious patients arriving at the port. It was reported in 1919 that

> The majority of cases were convalescent on arrival from hospitals in France, the Mediterranean, or from other centres of War. The cases on arrival were distributed to various Military Hospitals for isolation or discharge or furlough. The acute cases of Scarlet Fever, Diphtheria, Measles, Mumps, and Smallpox were removed to the County borough Isolation Hospital [Mousehole Lane] and Hospital Ship.[866]

Thus, by the end of the war most of the troops returning to Southampton did not proceed to a hospital at all, and around one quarter continued on to military hospitals, leaving a very small percentage to be accommodated in local isolation facilities.

	1915	1916	1917	1918	1919	1920
Borough	675 (68%)	402 (60%)	378 (50%)	346 (50%)	401 (78%)	505 (73%)
Port	34 (3%)	12 (2%)	14 (2%)	22 (3%)	18 (3%)	65 (9%)
Military	238 (24%)	237 (35%)	320 (42%)	163 (23%)	42 (8%)	0
Other districts	46 (5%)	24 (4%)	41 (5%)	163 (23%)	54 (10%)	124 (18%)
Total	**993**	**675**	**753**	**694**	**515**	**694**

Table 5.7 Breakdown of patients admitted to the Isolation Hospital, 1915-1920.[867]

However, figures for 1915 to 1920 showing the origin of patients accommodated in the isolation hospital indicate the impact of even this small proportion of the military

[861] Bowser p.47
[862] Ibid. pp.47-8
[863] Ibid. pp.47-8
[864] Ibid. pp.47-8
[865] Ibid. pp.50-53
[866] Lauder, *Annual Report for Borough and Port for 1919* p.113
[867] See Annual Medical Officer of Health Reports for the Borough, 1911 to 1920, recorded in tables titled Isolation Hospital and Hospital Ship.

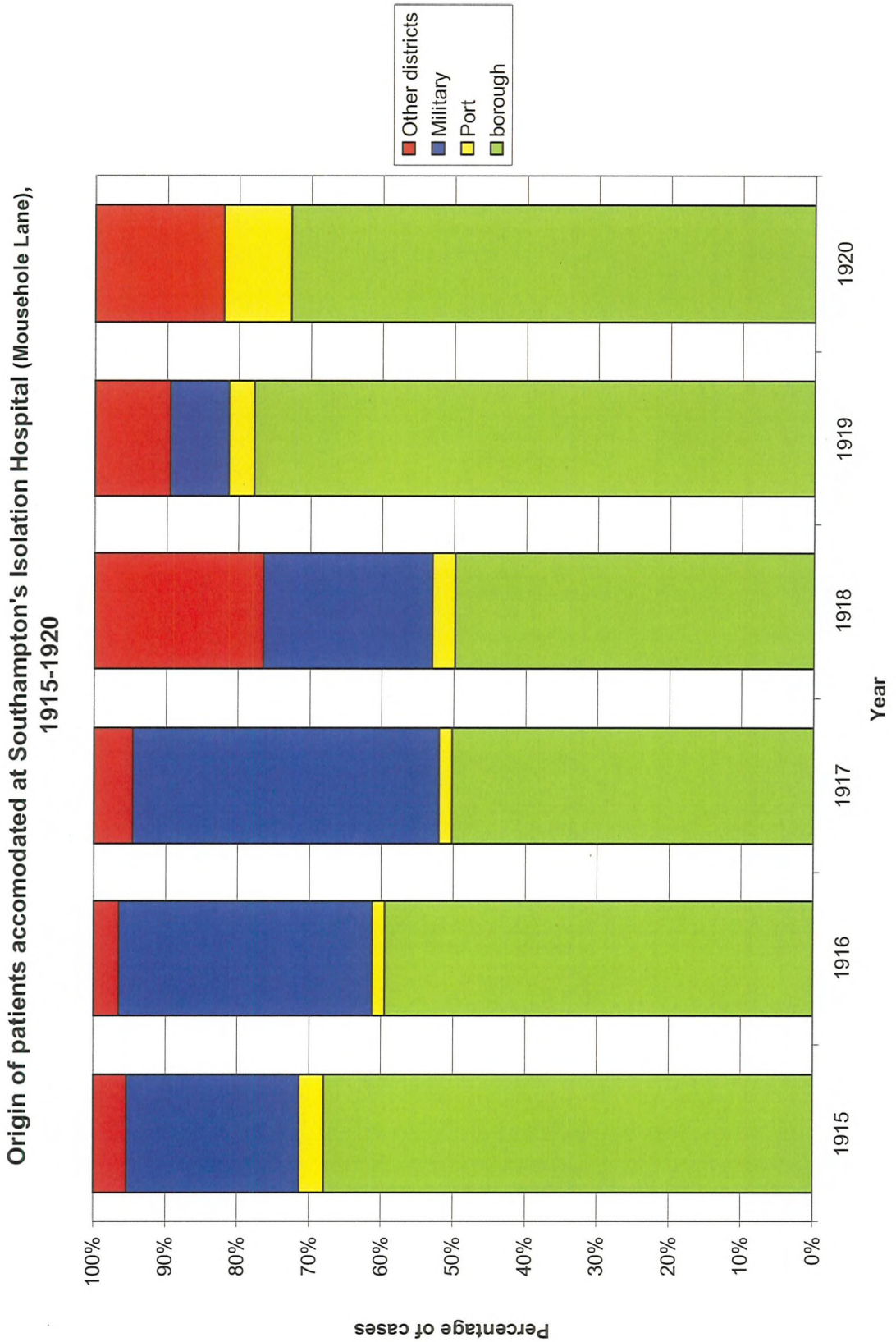

Figure 5.5 Origin of patients admitted to the Isolation Hospital, 1915-1920.[868]

[868] This graph is collated from data produced in the Annual Medical Officer of Health Reports, 1911 to 1920, recorded in tables titled Isolation Hospital and Hospital Ship.

patients being sent to non-military hospitals. Military cases treated at the local isolation hospital annually constituted over 23% of the hospital's patients between 1915 and 1918 (Figure 5.5 and Table 5.7). In 1919, this dropped dramatically to 8%. Comparing the data in Figure 5.5, the 8% of local isolation hospital patients that were military constituted less than 1% of the total number of troops returning to Southampton in 1919. Thus although the use of non-military hospitals had little consequence from a military perspective, from a civilian public health perspective troops were taking up to one quarter of the available hospital facilities. Despite this, at no time in the annual reports or correspondence is concern raised about the accommodation of town patients as a result of the increase in military patients. This is interesting as accommodation problems were regularly highlighted in annual reports in the years before the Mousehole Lane Isolation Hospital was established (1900).

Despite the increased number of patients during the war, the authorities did not report problems with accommodation or staffing levels as they did in pre-war years.[869] It is not possible to clarify whether this reflected a lack of problems or different priorities in war and peacetime. Nevertheless some potential problems were pre-empted; for example, when 119 American Army troops suffering from influenza where isolated at the Mousehole Lane isolation hospital in 1918 additional military medical staff were provided to assist. Throughout the war, 30 beds were set aside at the Isolation Hospital specifically for military patients.[870] It remains unclear whether these beds were enough to accommodate the influx of military patients.

Throughout the First World War, the arrival of troops meant there was a change in the origin of people accommodated and treated at the local isolation hospital. It is not possible to state conclusively, but it is highly unlikely that military patients forced local patients to other districts for treatment, as the isolation hospital continued to receive patients from outside the borough as well as patients from the town. For example, between 1915 and 1917 patients from other districts still constitute 5% to 8% of the hospital's patients; whilst in 1918 they amount to nearly a quarter (Figure 5.5 and Table 5.7). It is possible but unconfirmed that just as other boroughs called on Southampton's isolation facilities so Southampton's authorities called upon other local authorities and their facilities. However, there is no mention or record of such discussions in council

[869] See chapter 4 for details on local pre-war accommodation problems.
[870] Minutes and Proceedings (1915) 6 May 1915, p.508

minutes or annual reports, whereas there are records of discussions to accommodate patients from outside Southampton.

With such large numbers reported arriving at the port, and given that the number of patients isolated at Mousehole Lane from the borough during the war did not differ dramatically to pre-war figures it can be surmised that in most instances troops did not spread disease (Figure 5.1). Throughout the war, there appears to have been little correlation between the diseases arriving in the port and the diseases notified in the town. This is illustrated particularly well with respect to the occurrence of measles. In 1911 and 1912, over 50% of the patients arriving at the port suffering from notifiable diseases were admitted suffering from measles (Figure 5.1). However, they only totalled 99 and 71 patients respectively. In 1913, 164 measles patients arrived but these only made up 34% of the patients arriving at the port. Although measles was not a notifiable disease for the borough (introduced in 1916), it is likely that any significant outbreak would have been discussed in the MOH's annual report. After 1916, when the disease was notifiable in the borough, the isolation hospital admitted 802 (1916), 1970 (1917), and 2082 (1918) patients. Of these patients only a very small number arrived via the port: 28, 66 and 101 respectively out of a total of 8066 (1916), 2638 (1917), and 2296 (1918) troops reporting notifiable diseases upon arrival at the port; the majority of these patients were suffering from enteric fever or pulmonary tuberculosis as shown in Figure 5.1.

A particular incident involving measles supports the idea that in general disease did not spread from ship to shore. On 30 October 1914, 200 patients with measles arrived on the troopships H.M.T *Dover Castle* and H.M.T *Garth Castle*.[871] With so many patients arriving, and the need to keep an additional 500 passengers under observation, the local authorities required extra hospital facilities. 'The only suitable building of sufficient size in the borough to isolate the cases for treatment was the new building of the Hartley University College at Highfield'.[872] The War Office approved the use of the building, and once fully equipped (just 24 hours later) all patients were transferred to the facility at Highfield. This was a major operation as all relevant equipment – beds, bedding, furniture, and stores – had to be obtained and installed. The hospital closed on 21 November 1914 and the remaining patients returned to the Isolation Hospital.[873] Although not a notifiable disease, as previously noted, at no point during the transport and residence of these patients at Hartley University College did the MOH for the borough raise concerns about outbreaks of the disease amongst local residents.

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[871] Minutes and Proceedings (1914) 3 December 1914, p.71
[872] Ibid. 3 December 1914, p.71
[873] Ibid. 3 December 1914, p.71

The use of the Hartley University College to isolate military patents, along with the 30 beds set aside at the Isolation Hospital specifically for military patients, meant that no accommodation problems were reported during the war. In addition to these, various other hospital buildings are recalled in memoirs including the 'Detention Hospital' in the docks, a 'clearing hospital' and the hospital trains used to move invalid troops out of Southampton.[874] In spite of the general success in preventing measles spreading from port to borough, the landing of infectious patients at the port was occasionally considered to aggravate the presence of disease in the town, for example influenza in 1918.

In total, Southampton registered 472 deaths from influenza in 1918 (344) and 1919 (128).[875] It is believed that nationally the outbreak killed 225,000 in less than a year.[876] It has been argued that 'Glasgow, Portsmouth, Southampton and Liverpool [...were] likely ports of entry as they apparently reported cases (and deaths) earlier than many other centres'.[877] According to Niall Johnson's account, it was the week ending 28 July 1918 that marked the beginning of the pandemic for Britain.[878] The disease hit Southampton in July 1918 when a 'sharp outbreak occurred' with 10 deaths being registered; however, this is no earlier than for the rest of Britain.[879] During September and October 1918, 'the epidemic seemed to appear generally throughout the borough, no district apparently being exempt'.[880] By mid-November, the second wave of the epidemic had practically ceased in Southampton (second-wave refers to cases reported between October and mid-November). However, nationally this second wave continued to December 1918, whilst a third wave occurred nationally in March 1919.[881]

When compared to other port cities, Southampton fared reasonably well in terms of both total deaths and mortality rates. According to the figures of Smallman-Raynor et al., during the three waves Southampton suffered 371 deaths.[882] This constituted a mortality rate of 2.3 per 1,000 of the population, compared to other port cities such as

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[874] Minutes and Proceedings (1915) 6 May 1915, p. 508, and Bowser

[875] Lauder, R. E., *Annual Report on the Health of the County Borough of Southampton and the Port of Southampton for the year, 1918* (Southampton: 1919) and Lauder, *Annual Report for Borough and Port for 1919* pp.10-11

[876] Johnson A much lower figure of 65,307 deaths has been presented in Smallman-Raynor, M. R., *et al.*, 'The Spatial Anatomy of an Epidemic: Influezna in London and the County Boroughs of England and Wales, 1918 - 1919', *Transactions of the Institute of British Geographers*, vol. 27 (2002), pp. 452 - 470

[877] Johnson p.146

[878] Ibid. p.146. Many historians and scientists have studies the origins and reasons for the 1918 influenza pandemic. See also Laver, G. and Garman, E., 'The Origin and Control of Pandemic Influenza', *Science*, vol. 293 (2001), pp. 1776-1777, Phillips and Killingray, eds. ,and Johnson, N., *Britain and the 1918-19 Influenza Pandemic: A Dark Epilogue* (London: Routledge, 2006)

[879] Lauder, *Annual Report for Borough and Port, 1918* p.7

[880] Ibid. p.7

[881] Johnson, 'Overshadowed Killer'

[882] Smallman-Raynor, *et al.*, 'Influenza in London' p.456.

Liverpool with a mortality rate of 3.2 per 1,000 (2,595 deaths), Bristol with 3.7 per 1000 (1,406 deaths), and Portsmouth with 3.8 per 1000 (940 deaths).[883] A number of factors may have contributed to the lower influenza mortality rate in Southampton. In particular, troops were placed on hospital trains or transported to the Royal Victoria Netley Military Hospital as well as staying in Southampton's local hospitals upon their arrival. Further specific investigation is required on other port cities to provide a more detailed insight into Southampton's lower mortality rate.

At the time, Southampton's MOH believed that the arrival of H.M.T *Olympic* from New York in September 1918 'probably aggravated the epidemic'.[884] However, the town's very low influenza mortality rate and evidence relating to the second wave indicate that the arrival of the H.M.T *Olympic* did not aggravate the disease. The vessel landed 5,983 troops and 758 crew. Of these over 500 were experiencing the early stages of influenza, but only one death was reported from influenza during the voyage.[885] There are many accounts arguing that the international movement of troops aggravated the spread of influenza in 1918.[886] Australia imposed quarantine on all vessels, and in New Zealand returning troopships 'were the likely culprits, rather than the passenger liner[s]'.[887] In Bombay, two explanations for the outbreak emerged; one that the troopships arrived with influenza and the other that troops caught the disease whilst present in Bombay.[888] The latter, as Ramanna explains, was 'the characteristic response of the authorities, to attribute any epidemic that they could not control to India'.[889] Either way, the role of the troops and their movement on troopships were considered crucial in the spread of influenza.

Many of the crew returning to Southampton were local residents and many of the troops stayed in military camps across the town, including the Rest Camp on

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[883] Mortality rates calculated as a proportion of the cities' population based on data from Ibid. p. 456. Smallman-Raynor et al have obtained their figures from the weekly influenza reports that were presented in the *Supplement of the Forty Eighth Annual Report of the Local Government Board 1918-1919* between 8 June 1918 to 26 April 1919.

[884] Lauder, *Annual Report for Borough and Port, 1918* p.8

[885] Ibid. p.8

[886] See Phillips and Killingray, eds. in particular chapters 5 ('Japan and New Zealand in the 1918 influenza pandemic: comparative perspectives on official responses and crisis management' pp 73 - 85), 6 ('Coping with the influenza pandemic: the Bombay experience' pp. 86 - 98), and 9 ('The overshadowed killer: influenza in Britain 1918- 19' pp. 132 - 155)

[887] Rice, G. W., 'Japan and New Zealand in the 1918 influenza pandemic: Comparative perspectives on official responses and crisis managment', in *The Spanish Influenza Pandemic of 1918 -19*, ed. by Phillips, H. and Killingray, D. (New York: Routledge, 2006) pp. pp. 73 - 85, p. 74

[888] Ramanna, M., 'Coping with the Influenza Pandemic: The Bombay Experience', in *The Spanish Influenza Pandemic of 1918 -19*, ed. by Phillips, H. and Killingray, D. (New York: Routledge, 2006) pp. pp. 86 - 98, p.87

[889] Ibid. p.87

Southampton Common.[890] At the request of the American Army Authorities, in September 1918 the isolation hospital accommodated and treated troops with severe influenza, with additional army nursing staff to assist with care and treatment.[891] In total only 119 American Army soldiers were admitted to the isolation hospital.[892] Of these patients 41 died, including one American Army Nurse, constituting 12% of the town's influenza deaths in 1918.[893] These were the only influenza patients admitted to the isolation hospital for treatment in 1918 and 1919, indicating that all other influenza patients were treated at either other hospitals, for example the Royal South Hants, or remained at home.

In 1918, according to the local annual report on the health of the borough, 344 deaths from influenza were registered, most of which occurred in October (214) and November (81).[894] The patterns of mortality in Southampton, as shown in the MOH annual report, reflect trends found elsewhere in Britain. With regards to age distribution, in Southampton victims were mainly aged 15-45 (212), rather than being very young or elderly, and deaths were fairly evenly distributed between men (155, 45%) and women (189, 55%).[895] The proportion of deaths occurring in each wave of the disease, as reported by Smallman-Raynor, also mirrored patterns in other port cities. The first wave constituted only 4% of the total deaths from influenza, the second wave resulted in the largest proportion of deaths (64%) and the third wave constituted the final 27% of total deaths. This reflects almost exactly the national distribution of deaths across each wave: 7%, 64% and 25% respectively.[896]

The arrival of the H.M.T. *Olympic* on the 21 September coincided with the sudden increase in deaths from influenza in the borough in October 1918. For most of the epidemic, even during the first major outbreak in July, Southampton only recorded between one and four deaths per week for the borough. Two weeks after the ship's arrival, in the week ending 5 October, the number of deaths increased dramatically to 10, and then 54 the following week. A causal relationship between these deaths, the isolation of the 119 American troops (September 1918), and the arrival the H.M.T. *Olympic* with

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[890] Lauder, *Annual Report for Borough and Port, 1918* p.8
[891] Ibid. p.9
[892] Ibid. p.9
[893] Ibid. p.9
[894] Ibid. p.9 It should be noted that Smallman-Raynor et al. report only 252 deaths but are only looking at the first two waves, which took place between 29 June to 10 August 1918, and 12 October 1918 to 11 January 1919. The figure of 344 includes the deaths discussed by Smallman-Raynor, and those that occurred in between these waves.
[895] Ibid. p.10
[896] Mortality rates calculated as a proportion of those who died from influenza in Southampton, based on data from Smallman-Raynor, *et al.*, 'Influenza in London' p. 456 The remaining 5% and 4% accounts for inter-wave deaths.

500 patients in the early stages of influenza is plausible. However, there are also three reasons why the troops are unlikely to have aggravated the outbreak. Firstly, the increase in mortality coincides with national increase.[897] Secondly, Southampton experienced a lower mortality rate than other port towns (a difference of 0.9-1.5 deaths per 1,000) despite the great number of troops arriving in the town. Thirdly, despite the notification of 1,289 cases of influenza arriving at the port in 1919, Southampton suffered only 128 deaths from the disease.[898]

It can be concluded that troops did not spread infectious disease to the residents of Southampton. Though there were an increased number of patients arriving in Southampton, there was no change in the reported disease levels in the borough. Also, the fact that Southampton continued to receive patients from outside the district means that Southampton's facilities were not under any particular strain at this time. The most definitive evidence that the arrival of troops did not adversely affect health or mortality in the town is demonstrated through the 1918 influenza epidemic. Despite the continued arrival of troops bringing influenza, Southampton had a lower mortality rate than other port towns and the spread of the disease did not follow the patterns of other port towns.

5.5. Conclusion

Trooping clearly played an important role in the history of Southampton as a port. Always an important peacetime trooping port, Southampton's role changed in 1894 when it became the country's primary trooping port. This change had consequences on Southampton's port health practices and also had an impact on local businesses, both of which underwent the most dramatic changes during the First World War. Across the town the impact varied. For some the closure of the port to commercial traffic had detrimental effects because the port was the main trade for the town. Others such as cinema owners were able to tap into new markets.

The disembarkation of troops decisively influenced port health practices. It presented a number of challenges including the demands of inspecting the large numbers of troops arriving and deciding how to treat them. Despite the large numbers that arrived over the five years of the First World War, with such a long and varied list of infectious diseases at various stages of severity, it was believed that

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[897] Johnson, 'Overshadowed Killer' p.147 Figure 9.7 Influenza mortality in selected cities in England, 1918 -19

[898] Lauder, *Annual Report for Borough and Port for 1919* p.120. Of the influenza cases reported: 523 were removed to military hospitals, 2 removed to local isolation hospitals, 153 had been landed at previous ports, 15 landed in Southampton but did not proceed to hospital, 10 died at sea, and 586 were convalescent on arrival. Unfortunately, equivalent figures for 1918 are not available.

> it speaks well for the care and thoroughness with which precautionary measures were carried out in the Port which prevented the spread of infection to the civil and military population in the Town and the Country.[899]

It has been shown that since its establishment in 1873 the Port Sanitary Authority was successful in preventing the spread of disease even when under the control of the War Office and Admiralty during the First World War. It did this with at times a lack of appropriate equipment and operated under significant pressure from the number of vessels and troops arriving at the port. Because of tight and effective prophylactic measures, the impact on the town's health was minimal. Only the arrival of H.M.T *Olympic* could plausibly be linked to the sharp increase of influenza deaths in the weeks following its arrival. Importantly however, this sharp increase took place at the same time across the country, strongly indicating the arrival of the vessel was simply a coincidence.

A large proportion of infectious disease patients treated at the isolation hospital were military (for example 42% in 1917), but these were only a very small proportion of all the troops passing through the town. Overall, Southampton's Port Sanitary Authority succeeded in protecting the town from infectious diseases. By continuing previously adopted methods of disease prevention, the Port Sanitary Authority was able to protect Southampton's health during a period of change and upheaval for the port and docks and arguably outperformed PSAs in other port towns.

[899] Lauder, *PSA Annual Report for 1919* p.114

Chapter 6: Conclusion

This thesis has shown how medical and political factors in local, national and international arenas influenced the development of port health. By exploring different aspects of port health that were previously neglected, this dissertation has begun to bridge gaps within and between medical and maritime history and provide further evidence to clarify contentious issues such as the use of quarantine. In addition, it has shed light on the workings of port health in a local setting.

An assessment of the development of quarantine and the introduction of Port Sanitary Authorities was undertaken. The reasons for the abolition of quarantine in 1896 were examined and it was shown that the introduction of the Port Sanitary Authorities and the abolition of the frequently despised institution of quarantine were both part of bureaucratic moves to bring legislation in line with practice. With regard to Port Sanitary Authorities, the 1872 Public Health Act that brought these into existence (alongside urban and rural sanitary authorities) was merely outlining authority boundaries and consolidating the large number of authorities already in place, something previous work has neglected to recognise. This Act was a consequence of the Royal Sanitary Commission (1871-2) that concluded there was a need to streamline what had become a disorganised and confusing system with regard to both the authorities responsible for protecting public health and the range of legislative guidance. A national movement to improve public health meant that a number of acts lay down the Port Sanitary Authorities' responsibilities, while regular Orders in Council detailed courses of action for specific outbreaks of disease. The 1875 Public Health Act later consolidated the various pieces of legislation and guidance.

The conclusions of previous work, such as McDonald and Maglen, provide conflicting accounts about the use and importance of quarantine particularly in the last decades of the nineteenth century. McDonald argued that by 1896 the use of quarantine was 'obscure', while Maglen maintained that quarantine remained prominent until its abolition.[900] By identifying reports of quarantine at quarantine stations as well as ports more generally, the current work provides evidence of the use of quarantine up to its abolition in 1896, supporting Maglen's hypothesis, and indicated that alternatives were also in place. As shown in chapter three, customs officials employed quarantine on at least seven occasions between 1872 and 1896, five times at the Motherbank on the south coast of England, and twice at ports on the East coast of England where no quarantine

[900] McDonald , Maglen pp. 427-8

stations existed. A decrease from seven quarantine stations to one reflected the decline in British official support for quarantine, so that by the time of its abolition in 1896 alternative measures had been adopted in many ports to prevent the spread of quarantineable diseases. For example, many patients who arrived suffering from yellow fever were removed from vessels for treatment at local isolation hospitals. Thus, both the abolition of quarantine and introduction of Port Sanitary Authorities were instances in which extant legislation was consolidated and simplified, reflecting already well-established working practices, rather than introducing new port prophylactic measures.

This work also sheds light on other aspects of the practice of quarantine and Port Sanitary Authorities. Between 1825 and 1866, quarantine detention periods decreased from 30 to 13 days without the introduction of new or amended parliamentary acts. Previous work has not explained why such changes took place. This work has shown that Orders in Council (issued at any time relating to any disease) dictated port health practices, in particular quarantine periods. The use of Orders in Council to alter the work of the Port Sanitary Authorities and quarantine make port health history more complex, as the action required for specific diseases was regularly changing often providing additional requirements for a limited period. Such regular changes make it difficult to detail an accurate history of port health, and may explain the inconsistent port health approaches adopted across the country. The role of these orders in transforming port health practices is something that previous research has neglected to identify.

It also became clear that, as with many other areas in the history of medicine, local, national and international politics played significant roles in the development of port health practices in England and Wales. Political factors heavily influenced the development of quarantine, more than has previously been recognised. The International Sanitary Conferences (1851-1897) had a two-fold political influence on quarantine. Firstly, though not ratified, some English ports adopted the sanitary measures proposed in the ISCs' draft agreements, such as the disinfection of vessels. Secondly, continued support for quarantine from other European countries who attended these conferences, forced the prolonged use of quarantine in Britain. Or as one government official wrote, there was a need to 'maintain the appearance of quarantine' to prevent British vessels being quarantined abroad, which in turn would cause disruption to trade. Despite changes in medical theories, on contagion in particular, and concerns that quarantine even encouraged the spread of disease, the discussions in Britain on the abolition of quarantine predominantly focused on political factors.

This research has shown that between 1825 and 1896 the concept of quarantine was ever changing. The use and perception of the practice were constantly developing. By examining these changes in detail, it has been possible to address some of the gaps in the history of the development of port health in England and Wales over the nineteenth century. It is now clear that Port Sanitary Authorities informally emerged in 1866, while the formal establishment of the authorities took place in 1872 as part of a wider strategy to clarify the organisation of public health institutions. It is also apparent from a national examination that quarantine was not abolished when the nation felt safe behind port health reforms, as suggested by Baldwin, but rather when international pressure to maintain quarantine abated. This has additionally highlighted that, although quarantine was used between 1872 and 1896, the work of the Port Sanitary Authorities was slowly taking over with measures in place to isolate patients (including those with yellow fever or plague) in onshore and floating hospitals.

The in-depth study of Southampton has demonstrated some important aspects of port health in England and Wales that generalised national studies have missed. Initially established in 1873 as a temporary authority, Southampton's Port Sanitary Authority gained permanent status in 1893. It had clear geographical boundaries but with an ever-increasing list of responsibilities and problems accommodating patients, the boundary between the port and public health authorities in Southampton was fluid. Examining how Southampton's Port Sanitary Authority worked in practice has illustrated its range of responsibilities and shown how different health authorities, such as the port, urban and rural sanitary authorities interacted.

It has also been shown how particular local measures were adopted to prevent the spread of disease, contrary to Lawton and Lee's suggestion that port cities 'showed little concern to protect health'.[901] Examples of locally implemented measures include those arranged with local shipping companies to prevent the spread of smallpox, a disease excluded from Port Sanitary Authority and quarantine legislation. Port Sanitary Authority officials met with representatives of shipping companies based in Southampton and established 'friendly agreements', whereby any vessels arriving with smallpox patients on board would inform the Port Medical Officer so that measures could be taken, such as the isolation and treatment of the patient locally, to prevent the disease spreading. Without studying other ports and their port health measures in detail, it is not possible to assess how often local measures like these were implemented across

[901] Lawton and Lee, eds. p.26

the country. With a wider knowledge of local practices, it will be possible to uncover a more accurate history of port health in England and Wales.

Alongside locally implemented measures, Southampton's Port Sanitary Authority worked closely with private, voluntary, civilian and military health facilities in the town, as well as regional port, urban and rural sanitary authorities such as the Isle of Wight, Portsmouth, Winchester and the New Forest Urban and Port Sanitary Authorities. The lack of suitable isolation accommodation in Southampton and neighbouring authorities was often the factor that initiated these relationships. Evidence presented here shows the importance each authority placed on preventing the spread of disease, and develops the work by Maglen and Baldwin who both noted, but did not expand on, how port health institutions had to work together in order to prevent the spread of infectious diseases from ship to shore.

As well as demonstrating a close working relationship between Southampton's port and public health officials, this work has illustrated that the boundaries between port and public health were more fluid than previous literature has suggested.[902] It has shown that Southampton's Urban and Port Sanitary Authorities did have distinct roles and purposes, as Baldwin acknowledges, but that their overall aim was the same: to prevent the spread of disease. In Southampton, port health work was part of the public health system. Previous histories of public health have neglected the development of port health, while histories of port health have neglected the interaction Port Sanitary Authorities had with other sanitary authorities. The evidence from Southampton's approach to port health, presented here, has started to bridge this gap. Questions remain unanswered with regard to different types of port cities, for example, those with naval dockyards, a dedicated Port Medical Officer or a larger or smaller port. These all require further research to shed light on the way in which different port health measures were adopted. Drawing comparisons between Southampton and ports such as these will continue to reveal the development of English and Welsh port health.

This thesis has also explored the neglected area of the impact of war on port prophylactic measures. By looking at the port of Southampton from 1894, when it began developing as a trooping port, through to 1919, it has been possible to assess how the Port Sanitary Authority altered its practices in times of war and the impact disembarking military patients had on the town's health infrastructure and residents' health. Although only a small proportion of the troops were isolated in Southampton's civilian hospital

[902] Solomon, S. G., *et al.*, *Shifting boundaries of public health : Europe in the twentieth century* (Rochester, NY: University of Rochester Press, 2008) explores similar interactions from a European twentieth century perspective.

facilities during the First World War, they in fact constituted a large proportion of patients residing in local isolation facilities. Despite having to forge new relationships with military authorities, develop appropriate port health measures in line with wartime requirements and, at times, being faced with the arrival of very large numbers of troops, Southampton's Port Sanitary Authority successfully continued to prevent the spread of infectious disease.

An assessment of the influenza pandemic (1918-1919) in Southampton has shown that, contrary to the argument that ports experienced the pandemic earlier than non-port towns, in Southampton the initial outbreak occurred at the same time as in non-port towns in Britain. A second wave began in Southampton a month before the rest of the country, which supports Johnson's arguments.[903] However, Southampton's residents and visitors fared well, experiencing a lower local mortality rate than other port towns. The lower mortality rate and evidence provided here indicate that the movement of troops through Southampton did not increase the spread of influenza. To understand the wider extent to which war affected port health, further local studies need to be conducted in other military ports.

This thesis has begun to bridge some gaps between the histories of port health and public health, maritime history and the history of war and medicine. By looking at Southampton, it has provided answers and more depth to our understanding of how port health worked in practice, as well as highlighting the need to undertake further local studies in ports with different characteristics. This research has demonstrated that national generalisations about the practice of port health, the spread of disease and specifically the impact of troops on the spread of influenza all need to be questioned from a local perspective and that national generalisations do not provide an accurate portrayal of port health history.

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