THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Economic History Working Papers No: 188/2014

Medical care in early modern Venice

Alex Bamji
University of Leeds

Economic History Department, London School of Economics and Political Science, Houghton Street, London, WC2A 2AE, London, UK. T: +44 (0) 20 7955 7084. F: +44 (0) 20 7955 7730

LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE
DEPARTMENT OF ECONOMIC HISTORY
WORKING PAPERS
NO. 188- MARCH 2014

Medical Care in Early Modern Venice

Alex Bamji

Abstract

In early modern Venice, a wide range of people offered care, goods and services for the health of the city's numerous inhabitants. This study utilises Venice's civic death registers to assess when and why the sick and dying accessed medical care, and how this changed over the course of the early modern period. The detailed registers permit consideration of the profile of medical practitioners, key aspects of patient identity, the involvement of institutions in the provision of medical care, and the relationship between type of illness and the propensity of the sufferer to seek medical support. This study assesses the type, number, density and distribution of practitioners in the city. It demonstrates that recourse to medical care was largely determined by age, social status and type of illness. The lack of financial resources or family support did not preclude access to medical care, due to a web of institutions which offered care to a diverse clientele.

JEL Codes: N33, N30, O14, I11, I19

Keywords: age; death registers; medical care; medical practitioners; Venice

Acknowledgements: This work was supported by the Arts and Humanities Research Council [AH/I002448/1] and the Gladys Krieble Delmas Foundation. I am very grateful to Patrick Wallis for his encouragement and advice. Many thanks also to Sandra Cavallo, Shane Doyle and Mary Laven for valuable suggestions.

Italy's sophisticated network of healthcare provision makes it a key locus of analysis in any evaluation of the development of European medical culture.[1] In early modern Italy, the sick could seek help from a variety of healers, including learned physicians, priests and wise women.[2] Scholars have explored the factors which motivated sick people to choose particular practitioners, remedies, and combinations of both in many European contexts.[3] They have shed light on the number, nature and regulation of practitioners who offered medical care.[4] Valuable work has also been done on the dynamics of relationships between patients and practitioners.[5] Yet there is relatively little research that successfully examines the scale of patient demand or the provision of care by practitioners, or its development over time. For England, Ian Mortimer has argued that over the course of the seventeenth century there was a huge increase in the propensity of the seriously ill to choose medical care.[6] For Italy, however, scholars have not hitherto examined how widely and frequently the sick sought care from trained medical practitioners, the density and distribution of such practitioners in particular locales, or how engagement changed over time.

If there was anywhere in early modern Europe where we would expect to find a high level of engagement with commercial medical provision, it would be Venice, a major trading centre with a large and relatively affluent population. A sizeable number and wide range of people offered care, goods and services for the health of the city's numerous inhabitants. The nearby medical school at the University of Padua provided a ready supply of educated physicians and surgeons.[7] Charlatans hawked their wares in the city's squares, midwives delivered babies, friars provided exorcisms, and barbers treated wounds. Female healers offered treatments which often had a religious dimension, and incurred the wrath of the Inquisition. Medicines could be obtained from over one hundred pharmacies dotted across

[1] David D'Andrea, *Civic Christianity in Renaissance Italy: The Hospital of Treviso, 1400-1530* (New York: University of Rochester Press, 2007); John Henderson, *The Renaissance Hospital: Healing the Body and Healing the Soul* (New Haven: Yale University Press, 2006); Katherine Park, 'Healing the Poor: Hospitals and Medical Assistance in Renaissance Florence', in Jonathan Barry and Colin Jones (eds), *Medicine and Charity before the Welfare State* (London: Routledge, 1991), pp. 31-39; Sandra Cavallo, *Charity and Power in Early Modern Italy: Benefactors and their motives in Turin, 1541-1789* (Cambridge: Cambridge University Press, 1995).

[2] David Gentilcore, *Healers and Healing in Early Modern Italy* (Manchester: Manchester University Press, 1998), pp. 1-3; Sandra Cavallo, *Artisans of the Body in Early Modern Italy: Identities, Families and Masculinities* (Manchester: Manchester University Press, 2007).

[3] Mark S.R. Jenner and Patrick Wallis (eds), *Medicine and the Market in England and its Colonies, c. 1450-c. 1850* (Basingstoke: Palgrave Macmillan, 2007).

[4] Gianna Pomata, *Contracting a cure: patients, healers, and the law in early modern Bologna* (Baltimore: The Johns Hopkins University Press, 1998); Margaret Pelling, *The Common Lot: Sickness, Medical Occupations and the Urban Poor in Early Modern England* (London: Longman, 1998); Alan Withey, *Physick and the Family: Health, medicine and care in Wales, 1600-1750* (Manchester: Manchester University Press, 2011), pp. 151-162; Harold J. Cook, *Matters of Exchange: Commerce, Medicine and Science in the Dutch Golden Age* (New Haven: Yale University Press, 2007), pp. 142-154.

[5] Roy Porter (ed.), *Patients and practitioners: Lay perceptions of medicine in pre-industrial society* (Cambridge: Cambridge University Press, 1995); Barbara Duden, *The woman beneath the skin: A Doctor's patients in eighteenth-century Germany*, trans. Thomas Dunlap (Cambridge, MA: Harvard University Press, 1991).

[6] Ian Mortimer, *The Dying and the Doctors: The Medical Revolution in Seventeenth-Century England* (Boydell & Brewer, 2009), pp. 39-40, 54-56.

[7] Paul F. Grendler, *The Universities of the Italian Renaissance* (Baltimore: The Johns Hopkins University Press, 2002), pp. 314-352; Cynthia Klestinec, 'Medical Education in Padua: Students, Faculty and Facilities', in Ole Peter Grell et al., *Centres of Medical Excellence?: Medical Travel and Education in Europe, 1500-1789* (Farnham: Ashgate, 2010), pp. 193-220.

the city, and four major hospitals were founded or re-founded over the course of the sixteenth century.[8]

The destruction of the archive of Venice's College of Physicians in a fire in 1800 hinders the reconstruction of patterns of medical care. This article utilises Venice's civic death registers to assess when and why the sick and dying accessed medical care, and how this changed over the course of the early modern period. Death registers were compiled by the *Provveditori alla Sanità*, Venice's Health Magistracy, from the early sixteenth century until the early nineteenth century. These registers are well preserved with detailed individual entries. Their potential was exploited by Daniele Beltrami in his important study of Venice's population[9], but no systematic attention has previously been paid to the medical content of the registers, namely details of cause of death, specification of length of illness and the name of any medical practitioner who had attended the deceased prior to their demise.[10] The sources compare favourably with other types of records which have been used to assess early modern medical consumption, such as probate accounts and inventories, which do not mirror the age, gender and status profile of the population. All the same, death registers provide no information about expenditure on medical services.

Analysis of a sample of 3360 deaths from 1645, 1696, 1746 and 1796 reveals high levels of medical provision as well as a significant increase in recourse to medical care across the period studied. The detailed registers permit consideration of the profile of medical practitioners, key aspects of patient identity, the involvement of institutions in the provision of medical care, and the relationship between type of illness and the propensity of the sufferer to seek medical support. This study assesses the type, number, density and distribution of practitioners in the city, to elucidate the changing identities of physicians and surgeons, and the medical role of midwives. Second, it demonstrates that recourse to medical care was largely determined by age, social status and type of illness. Third, it highlights how the lack of financial resources or family support did not preclude access to

[8] Filippo de Vivo, 'Pharmacies as centres of communication in early modern Venice', *Renaissance Studies* 21:4 (2007): 505-521.

[9] Daniele Beltrami, *Storia della popolazione di Venezia dalla fine del secolo XVI alla caduta della Repubblica* (Padua, 1954). Beltrami's research established broad population trends in early modern Venice. From 1580 to 1619, deaths and births were almost in equilibrium. From 1610 to 1631, the death rate was much higher than the birth rate, especially due to the plague epidemic of 1630-1. From 1631 to 1709 there were more births than deaths, and from 1710 to the fall of the Republic in 1797, deaths constantly and progressively outweighed births. See Beltrami, p. 139. For a more recent critical examination of the sources for early modern Venice's population, including those used by Beltrami, see Giovanni Favero et al., 'Le anime dei demografi. Fonti per la rilevazione dello stato della popolazione di Venezia nei secoli XVI e XVII', *Bollettino di Demografia Storica* 15 (1991): 23-110.

[10] There has been some consideration of plague mortality in 1630, but using small samples. Stephen R. Ell, 'The Venetian Plague of 1630-1631: A Preliminary Epidemiologic Analysis', *Janus* 73 (1986-1990): 85-104; Stephen R. Ell, 'Three Days in October of 1630: Detailed Examination of Mortality During an Early Modern Plague Epidemic in Venice', *Review of Infectious Diseases* 11:1 (1989): 128-139; Carla Boccato, 'La mortalità nel Ghetto di Venezia durante la peste del 1630', *Archivio Veneto* 175 (1993): 111-146. There have also been specific studies of mortality of Jews, from venereal disease, and in the hospital of the Derelitti in the late sixteenth century. Carlo Boccato, 'Decessi di ebrei veneziani nella registrazione dei Provveditori alla Sanità, *Rassegna mensile di Israel* 50 (1984): 11-22; Laura McGough, *Gender, Sexuality and Syphilis in Early Modern Venice: The Disease that Came to Stay* (Basingstoke: Palgrave Macmillan, 2011), pp. 19-25; Richard Palmer, 'L'assistenza medica nella Venezia cinquecentesca', in Bernard Aikema and Dulcia Meijers (eds), *Nel Regno dei Poveri: Arte e storia dei grandi ospedali veneziani in età moderna 1474-1797* (Venice: IRE, 1989), pp. 36-37.

medical care, due to a web of institutions which offered care to a diverse clientele. Finally, it argues for the perceived value of *medical* care in early modern Europe, despite the focus of much recent scholarship on domestic medicine and self-help.[11]

1. Death registers

The Venetian Republic demonstrated an interest in population data as early as 1338, when the city's first official census was conducted.[12] On 21 August 1504, the *Provveditori alla Sanità* issued the first legislative act which required the reporting and recording of deaths in the city. Each parish priest was henceforth obliged to identify anyone sick in their parish on a daily basis, and to make a note of them in a book dedicated to this purpose, including details of the nature of the illness – especially any suspicion that they might be suffering from plague – and whether *medici* (doctors) had attended them or not. Each morning the priests were expected to report their findings – especially deaths – to the *Sanità*'s scribe, and no one was to be buried without a burial licence from the magistracy.[13] Further legislation followed. From 1540 parish priests were fined one ducat if they buried any corpse without having notified and received a burial licence from the magistracy.[14] A decree of 5 December 1553 obliged the heads of convents, monasteries and hospitals to report deaths in these institutions to the magistracy, and elaborated on the information which the *Sanità* required before a burial licence would be released: name, surname, age, length of illness and nature of illness.[15] On 11 June 1563 it was decided that licences could only be issued by the notary or scribe of the magistracy, or by their substitute, and that sudden deaths – those which occurred following an illness of four days or fewer – should be visited by the *protomedico* (state physician) prior to the release of the licence.[16] This latter provision was likely stimulated by the major outbreak of plague which affected the city from 1555 to 1558, and by contemporary perceptions of the length of time between the onset of the disease and death.

The information which was received by the *Sanità* was systematically compiled on a daily basis into registers known as *Necrologi* (necrologies). These records cover the period 1537-1805, with limited survival for 1537-1578, intermittent missing registers for 1579-1720, and near full survival thereafter.[17] The format of these long, thin volumes changed little over the course of this period. All the same, entries are very brief in the earliest surviving register from 1537, comprising an identifier and the parish of residence.[18] Adult men were named fairly consistently, usually by their first name and occupation. Others were simply identified as 'a widow', or 'a child', with the occupation of the father sometimes given. By 1565, the

[11] See, for instance, the important contributions of Elaine Leong, 'Making Medicines in the Early Modern Household', *Bulletin of the history of medicine* 82:1 (2008): 145-68; Seth Stein LeJacq, 'The Bounds of Domestic Healing: Medical Recipes, Storytelling and Surgery in Early Modern England', *Social history of medicine.* 26:3 (2013): 451-468; Michelle DiMeo and Sara Pennell, *Reading and writing recipe books, 1550-1800* (Manchester, 2013).

[12] Beltrami, p. 11.

[13] Beltrami, p. 17.

[14] Claudia Salmini, 'Prefazione', in Monica Del Rio (ed.), *509: Provveditori alla sanità. Necrologi (1537-1805) Inventario analitico a cura di Monica Del Rio* (Venice, 2005), p. 6.

[15] Beltrami, p. 19.

[16] Nelli-Elena Vanzan Marchini, *Le Leggi di Sanità*, vol. 4, Protomedico, 11 June 1563.

[17] Del Rio, pp. 29-34.

[18] Archivio di Stato di Venezia (henceforth ASV), *Provveditori alla Sanità* (henceforth *Sanità*), B. 794.

age of the deceased, length of illness and cause of death were also included in entries, which by now almost all included names and the occupation of the deceased or a male relation.[19] Although practitioners who had attended the deceased were noted in the 1570 register, this was exceptional and likely related to epidemics of typhus and smallpox in the city. From the early seventeenth century, however, practitioner presence was noted consistently in the *Necrologi*; hence the focus of this study on the seventeenth and eighteenth centuries.

Recording practices evolved further in the eighteenth century. From 1768 the chronological record was supplemented with an alphabetical list of the deceased at the rear of each year's volume. In the eighteenth century, although the clergy remained responsible for the communication of information, medical practitioners became formally involved in the process. Medical practitioners had long assisted the Venetian Republic, reporting violent wounds to the authorities since 1281, so that legal action could be taken against aggressors.[20] On 27 April 1731, it was decreed that physicians and surgeons who had visited the deceased were to provide a sworn and signed statement about the nature of their illness. In 1772, physicians were asked to specify when deaths were from tuberculosis. The first of these decrees explained that greater exactitude was desired about the cause of death than was presently being provided.[21] This comment contrasted with the admiration of other states for Venetian practices. In 1721 Bernadino Leoni Montenari had produced a report on the *Sanità* at the request of the consul of Holland, which stated that 'they keep exact registers of all the deaths which occur day to day in the city, and carefully examine those which occur without an overt prior illness'.[22]

This observation encapsulates the purpose of Venice's civic death registers. They drew sudden deaths to the attention of the authorities, enabling the Republic to respond quickly to anything which might pose a broader threat to the city, especially possible cases of plague. The registers also constituted a central repository of information on homicides. The speedy identification of suspicious or unusual cases was facilitated by the use of marginal images as finding aids, especially during the seventeenth century. These images include crosses and pointing fingers which drew attention to deaths from a range of causes, as well as drawings which represented a specific cause of death, such as animals, daggers, firearms, staircases (for falls), and waves (for drownings).

It is clear that medical practitioners who were named in the death registers had provided care to the deceased, and were not merely certifying deaths. From the outset, parish priests were expected to ascertain whether or not a practitioner had treated the deceased. Similarly, in the substantive decree on the registration of deaths which was issued on 4 May 1768, priests were asked to inform the authorities of deaths, 'identifying the name of the *medico* who had attended them'.[23] The nature of this attendance is clarified by individual entries in the registers which state that the deceased had been visited by ('visitato da') a

[19] ASV, *Sanità*, B. 801.
[20] Carol Loar, 'Medical Knowledge and the Early Modern English Coroner's Inquest', *Social History of Medicine* 23:3 (2010): 475-491 (p. 475).
[21] Beltrami, p. 22.
[22] Salmini, p. 6.
[23] ASV, *Sanità*, B. 760, 4 May 1768: 'individuando il nome del Medico, che li avesse assistiti'.

specific practitioner.[24] Other entries make reference to the *fede* of the attending doctor.[25] The decree of 1731 had specified the wording of this sworn statement: 'On this day X I the undersigned attest with my oath to having attended X of the age of X years during his/her last illness, who was surprised in the morning/evening/night of X by X illness and ceased to live on the morning/evening/night of X. Signature'.[26]

The monitoring of sudden deaths involved an additional layer of bureaucracy. From 1563, the *protomedico* was required to maintain a written record of his inspections of the corpses of those who had died suddenly. This documentation was kept separately from the *Necrologi*. Later, the *protomedico* was also expected to visit the sick if there was any suspicion of plague. Standards of record-keeping were evidently not up to scratch in 1649, when the *protomedico* Giovanni Battista Fuoli was exhorted 'to register the details of the visits made to the sick or dead in the book dedicated to this purpose, under penalty of the withdrawal of the post'.[27] Things soon improved, judging from the 'Depositions of the *Medico* of the Magistracy', the 415 entries of which run from 15 September 1653 to 26 October 1668, and the bulk of these are in the hand of Fuoli's nephew and successor, Cecilio Fuoli.[28] This register provides a meticulous record of the dead and the living whom the *protomedici* had examined in the city and in quarantine in the lagoon. Typically only a handful of patients or corpses were inspected each month, except in 1656 and 1657 when plague raged elsewhere in the Italian peninsula and the Republic was in a state of high alert. Entries indicate that the main aim of these inspections was to detect any indication of plague; in 265 entries the *protomedico* notes that he had found 'no sign of plague'. A second register survives, compiled by the *protomedico* Giovanni Domenico Santorini between 12 September 1711 and 19 March 1737.[29] This register contains more anatomical detail about Santorini's findings, but similarly he confirms the absence of plague in numerous entries.

Venice was not the only city where the bodies of the sick and dead were examined for signs of plague. In Turin, a corpse inspector was appointed whenever there were reports of plague in nearby areas.[30] In other parts of Europe, inspections were not always carried out by highly qualified physicians. As Richelle Munkhoff has shown, two older women were employed as searchers of the dead in each of London's parishes from the 1570s onwards.[31] But trained practitioners played a prominent role in monitoring mortality elsewhere on the Italian peninsula, notably in Milan, where physicians and surgeons who belonged to the

[24] See for example, ASV, *Sanità*, B. 873, 6 May, 5 June, 10 July, 6, 7 and 9 October, 3 November 1645; ASV, *Sanità*, B. 900, 3 April, 1 July, 2 December, 4 February 1696; ASV, B. 934, 2 April and 1 December 1746; ASV, B. 983, 6 July, 3 August, 1 October, 2 and 3 November, 2 December 1796.

[25] See ASV, *Sanità*, B. 983.

[26] Beltrami, p. 22. 'Addì … Attesto io infrascritto con mio giuramento d'aver assistito nell'ultima sua malattia N.N. d'età … d'anni … il quale sopreso la mattina o sera o notte di … di male … finì di vivere la mattina sera o notte di … Firma.'

[27] Nelli-Elena Vanzan Marchini, *Le Leggi di Sanità*, vol. 4, Protomedico, 21 April 1649. Giovanni Battista Fuoli was *protomedico* from 1624 to 1655.

[28] ASV, *Sanità*, B. 561, 1653: Depositioni del Medico del Magistrato. Cecilio Fuoli was *protomedico* from 1655 to 1682.

[29] Fondazione Querini Stampalia, Cl. V COD 42 (374).

[30] Sandra Cavallo, *Charity and Power in Early Modern Italy: Benefactors and their Motives in Turin, 1541-1789* (Cambridge: Cambridge University Press, 1995), p. 41

[31] Richelle Munkhoff, 'Searchers of the Dead: Authority, Marginality and the Interpretation of Plague in England, 1574-1665', *Gender and History* 11:1 (1999): 1-29 (pp. 1-2).

city's College of Medicine were intimately involved in procedures.[32] In Venice, recording the name of any practitioner who had treated the sick facilitated the task of the *protomedico* charged with monitoring sudden deaths. *Protomedici* were well-connected, prominent physicians, invariably members of Venice's College of Physicians, who would have been personally acquainted with the vast majority of practitioners named in the *Necrologi*.

Venice's death registers were highly detailed. Age and length of illness were given in days, weeks or years, or alternatively in the latter case as 'always'. Deaths were attributed to one of the city's seventy parishes, or to the parish of S. Maria Elisabetta which corresponded to the Lido. The registers do not record deaths on other outlying islands such as Murano, or deaths which occurred in the Jewish Ghetto. Deaths of the male and female religious were recorded against the parish in which they died, not their institution. By contrast, the *Necrologi* recorded deaths in the city's main hospitals against the name of the hospital, rather than the parish in which the hospital was located.

From the late seventeenth century, burial information was always noted in the death registers. The *Sanità*'s interest in this information related to a tax on burials which corresponded to the number of priests involved in the funeral.[33] At the end of the period, there was often a comment about the time or timing of the burial. Frequently an entry also included information about the father or husband of the deceased – sometimes both – and the occupation of the individual or their father or spouse. Occasionally the mother was noted, usually with a comment that the deceased father's was 'unknown'. Surnames were included more consistently later in the period, with a corresponding decline in indications of occupation. In the eighteenth century, the time of death was frequently noted. If a practitioner had treated the deceased, their surname was recorded, and first names of practitioners are also given in the late eighteenth-century records. Sometimes multiple factors which had contributed to the death, or additional information about the circumstances of death are supplied. Furthermore, the gender of the deceased can be identified from first names, and titles provide hints of social status.

Four volumes of the *Necrologi* have been sampled for this study: 1645, 1696, 1746 and 1796. Each of these volumes follows the Venetian year and runs from March to February. The sampled years have been chosen with consideration of surviving registers, their proximity to available data about physicians and population, and the fall of the Venetian Republic in 1797. For each year, the first 70 entries for each month have been transcribed to minimise the impact of seasonal variation in mortality patterns. Studies of death registers elsewhere highlight under-registration, particularly of newborn infants, as a problem. Under-registration was not a significant issue in the Venetian context, however. Rates of infant mortality are higher than most estimates for early modern London, and high compared to estimates for rural Eurasian communities.[34] The Venetian Republic was highly

[32] Ann C. Carmichael, 'Contagion Theory and Contagion Practice in Fifteenth-Century Milan', *Renaissance Quarterly* (1991): 213-256 (218-9).

[33] ASV, *Sanita*, B. 743, 9 January 1673; ASV, *Sanità*, B. 85, 16 February 1684; ASV, *Sanità*, B. 87, 3 July 1698.

[34] Roger Finlay, *Population and Metropolis: The Demography of London 1580-1650* (Cambridge: Cambridge University Press, 1981), p. 30; John Landers, *Death and the metropolis: Studies in the demographic history of London, 1670-1830* (Cambridge: Cambridge University Press, 1993), pp. 100, 136. Cameron Campbell and James Z. Lee, *Life under Pressure: Mortality and Living Standards in Europe and Asia, 1700-1900* (Cambridge, MA: The MIT Press, 2009), p. 366. Thanks to Patrick Wallis for drawing this to my attention.

bureaucratic and accustomed to keeping a meticulous record of the work of its manifold magistracies.[35] Furthermore, parishes were close-knit communities in which individuals and families lived in intimate physical proximity.[36] It was therefore difficult to give birth unnoticed, and attempts to conceal births were often unsuccessful.[37] In any case, the desire to facilitate the soul's passing to the afterlife via a proper burial was a powerful religious imperative which encouraged notification of infant deaths to the local priest.

The potential of death registers is limited in certain ways by their original purpose.[38] Illness does not always lead to death, and the registers therefore underplay chronic illness and do not necessarily reflect how it was treated, even if some of the recorded lengths of illness prior to death were prolonged. Death registers contain evidence of regular care as well as emergency care, and do not tell us at what point in an illness a practitioner was called in. Over the course of the period there is an increase in the frequency in which two periods of illness are stated: a long-term illness, and the recent illness from which the individual in question had died. These are extremely rare in 1645, but more common by 1796, and the shorter period is sometimes an explicit specification of how long the individual had been in bed. Gerolamo Squerariol, for example, had been ill for five months and in bed for 5 days on his death on 10 October 1645. Where this occurs, the shorter duration has been coded. In Paris at this time, the *dernière maladie* or last illness was an important legal category. In Venice, it also featured as part of the sworn statement of the *medico* from 1731. Yet there is no corresponding indication of its legal importance here. Although there is a decline in the number of single illnesses of long duration by 1796, many had still been sick for some time.

The registers reflect the Republic's specific interest in medical care, and tell us little about spiritual healing, nursing or the activity of female healers. The extent to which care for those who died mirrored care for the sick who did not die cannot be ascertained. Spelling also complicates analysis, since the spelling of names and other details varies considerably within registers as well as over the course of the early modern period. For these reasons, this study concentrates on the forms of medical care which are detailed in these sources, and recognises that ultimately this care was unsuccessful.

2. Medical practitioners

The percentage of the deceased who had seen a practitioner prior to their death increased from 38% in 1645 to 82% in 1796 (see table 1). The level of consumption of medical care is even more striking when attention is paid to the identities of the practitioners and the age of the deceased. Medical practitioners who are mentioned in Venice's death registers fall into five clear categories: barber, *medico*, midwife, nurse and surgeon (all labels used for these categories are detailed in table 2). The vast majority of references to practitioners in

[35] Filippo de Vivo, 'Ordering the archive in early modern Venice (1400-1650)', *Archival Science* 10 (2010): 231-248.

[36] See Alexander Cowan, 'Gossip and street culture in early modern Venice', *Journal of Early Modern History* 12 (2008): 313-333.

[37] See Joanne Ferraro, *Nefarious Crimes, Contested Justice: Illicit Sex and Infanticide in the Republic of Venice, 1557-1789* (Baltimore: The Johns Hopkins University Press, 2008), ch. 4.

[38] On death registers as historical sources, see especially George C. Alter and Ann G. Carmichael, 'Classifying the Dead: Toward a History of the Registration of Causes of Death', *Journal of the History of Medicine* 54 (1999): 114-132, and special issues of *Continuity and Change* 12 (1997) and *Historical Methods* 29 (1996).

Venice's death registers are to a *medico* (pl. *medici*), which referred to an individual who possessed a doctorate in medicine, surgery or both.[39] The percentage of adults who had been attended by a *medico* increased from 62% in 1645 to 95% in 1796 (see table 3). At the end of the eighteenth century, those who had not seen a *medico* had mostly died unexpectedly, having drowned, been murdered, or simply been found dead. By this time, therefore, adults routinely sought medical support when ill.

The identification of *medici* in the *Necrologi* indicates that they were held in high regard, and that the boundary between physicians and surgeons was fluid in early modern Venice. The honorific 'Eccellente' was sometimes appended to or substituted for *medico*. Individuals were also identified as 'Doctor' in the 1796 register, and some are labelled more precisely as doctors of physic, surgery or both (see table 2). Labels were used interchangeably. Pellegrino Buora, for instance, is variously described as 'Eccellente', 'Eccellente Dottor', 'Eccellente medico fisico', 'medico', 'medico Eccellente' and 'medico fisico'.[40] There are only a handful of specific references to a surgeon (*chirurgo*) in the data. In 1645, Caffi is the only surgeon named, but a Caffi is also named seven times as a *medico* (twice treating a wound), and Pietro Caffi is named as a member of the College of Physicians in 1646.[41] The 1696 sample includes two surgeons working alone, Anzolo Campagno and Zuanne Zocolari, two surgeons who had collaborated with a *medico*, Fidelli and Carlo Osti, and a *norsino* (a specialist surgeon who often treated hernias). Only Osti was also cited as a *medico*. None of the surgeons mentioned in the eighteenth century registers were also named as *medici*.

The nature of distinctions between physicians and surgeons has been extensively debated.[42] In Venice, the limited specification of surgeons in the registers reflects how both physicians and surgeons were considered to be *medici*, and that the term *chirurgo* was often used interchangeably or to draw attention to the specialised expertise of the practitioner in question.[43] The boundary between physicians and surgeons was blurred, although the degree of overlap changed over time, as institutional structures highlight. The first Venetian medical guild was for both physicians and surgeons, and was in existence as early as 1258.[44] By the sixteenth century, there were separate Colleges of Physicians and Surgeons, but as Richard Palmer has shown, there was considerable overlap and cooperation between their members.[45] The College of Surgeons, however, was decimated by the plague of 1630-1, which only two of its members survived. The upshot was a resolution in 1635 by the College

[39] On learned practitioners in Venice, see Giuseppe Trebbi, 'Le professioni liberali', in Alberto Tenenti e Ugo Tucci (eds), *Storia di Venezia: dalle origini alla caduta della Serenissima. IV. Il Rinascimento. Politica e cultura* (Roma, 1996), pp. 465-527.

[40] ASV, *Sanità*, B. 983.

[41] Biblioteca Museo Correr (BMC), Codice Cicogna 2533.

[42] Samuel Cohn follows more recent scholars in highlighting overlap between the roles and in underlining the high status of Italian surgeons. For a helpful summary of prominent contributions to the debate, see Samuel K. Cohn, Jr., *Cultures of Plague: Medical Thinking at the End of the Renaissance* (Oxford: Oxford University Press, 2010), p. 14, n. 26.

[43] In this study, practitioners labelled as *chirurghi* are not included in calculations of the number of *medici*.

[44] Carlo M. Cipolla, *Public Health and the Medical Profession in the Renaissance* (Cambridge: Cambridge University Press, 1976), p. 6.

[45] Richard J. Palmer, 'Physicians and Surgeons in Sixteenth-Century Venice', *Medical History* 23 (1979): 451-460 (451). David Gentilcore presents a similar picture for southern Italy. See David Gentilcore, *Healers and Healing in Early Modern Italy* (Manchester: Manchester University Press, 1998), p. 74.

of Physicians to elect seven of their number to hold membership of both groupings.[46] A greater sense of distinction re-emerged in the eighteenth century, fostered in part by the licensing of some surgeons to administer physic by the Republic.[47] Thus many physicians practised surgery, but some surgeons were not allowed to practise physic. All the same, surgeons were still esteemed, and the College of Surgeons was granted greater independence in 1763, and permitted to confer doctorates from 1780.[48] Collegiate surgeons were keen to differentiate themselves from barbers.[49] Barbers feature infrequently in the *Necrologi*, exclusively in the seventeenth-century records, and had mostly treated patients suffering from a wound, and in one case an ulcer caused by venereal disease. In Venice, the occupational identity of barbers and surgeons was distinct, even if aspects of their activity overlapped.

Aside from the blurring of physic and surgery, physicians in the city had varied identities. Some were members of the College of Physicians, and others were not.[50] The College of Physicians was able to confer doctorates of medicine or philosophy, and its records give an indication of the origins of doctors who worked in Venice, since many of those who trained in the city remained there afterwards.[51] Of those who obtained doctorates of medicine in seventeenth-century Venice, 55% were from the city itself, many others were from Venice's mainland territories, especially Brescia (7%) and Bergamo (6%), and a handful came from north of the alps.[52]

Most physicians were Christian, but some were Jewish. The *Necrologi* permit evaluation of attempts to restrict the activities of Jewish physicians from the sixteenth century onwards. From 1555, Jews were not allowed to be members of the College of Physicians.[53] In the late sixteenth century, the anxieties of the Catholic Church that Jewish doctors might inhibit the administration of the sacraments to the sick and dying culminated in Gregory XIII's bull of 1581, which prohibited Jewish doctors from treating Christian patients. One of Venice's leading Jewish physicians, David de Pomis, refuted the basis of Gregory's accusations in a work published in Venice in 1588.[54] The following year, de Pomis appealed directly to Gregory's successor, Sixtus V, to grant him a licence to attend Christians, emphasising his qualifications in medicine and philosophy, previous licences and care for the sick during the plague of 1575-7. Several months before, the papal nuncio, the pope's representative in the

[46] Biblioteca Nazionale Marciana (BNM), Italiani VII 2342 (=9695), *Notitie cavate alli libri di* Priori, 1635.
[47] See ASV, *Sanità*, B. 747, 4 March 1712.
[48] Raffaele A. Bernabeo, 'Le tecniche e gli strumenti', in Nelli-Elena Vanzan Marchini (ed.), *La memoria della salute: Venezia e il suo ospedale dal XVI al XX secolo* (Venice: Arsenale Editore, 1985), p. 53.
[49] Alessandro Pastore, 'Corpi feriti e corpi violentati a Venezia: I rapporti fra gli uffici giudiziari e la professione sanitaria', in Alessandro Pastore, *Il medico in tribunale: la perizia medica nella procedura penale d'antico regime (secoli XVI-XVIII)* (Bellinzona: Edizioni Casagrande, 1998), p. 151.
[50] On the earlier history of the College of Physicians, see Richard Palmer, *The Studio of Venice and its Graduates in the Sixteenth Century* (Padua: Edizioni Lint, 1983), pp. 3-14.
[51] Paul F. Grendler, *The Universities of the Italian Renaissance* (Baltimore: The Johns Hopkins University Press, 2002), pp. 140-141.
[52] BNM, Italiani VII 2379 (=9686), Nota di tutti li Dottorati che sono stati fatti nel Almo Collegio de Medici Fisici di questa Serenissima Dominante.
[53] Benjamin Ravid, 'In defense of the Jewish doctors of Venice, ca. 1670', in Mauro Perani (ed.), *Una Manna Buona per Mantova* (Florence, 2004), p. 488.
[54] De Pomis, *De Medico Hebraeo Enarratio Apologica* (Venice, 1588).

city, had written to Rome with an identical request following the lobbying of Venetian nobles on the Jewish physicians' behalf that 'these doctors were men of long-tried worth'.[55]

The attitude of the Republic had shifted in the mid seventeenth century, because a *Sanità* decree of 10 March 1642 prohibited Jewish doctors from treating Christian patients, which quickly provoked a response from those affected.[56] Three Jewish physicians petitioned the *Sanità*, each one of whom was described as a *medico fisico*, and all three cited licences to practise previously granted by the magistracy. Geremia Maurogonato and Giuseppe Canio both referred to their doctorates from the University of Padua, and David Valenzo highlighted how his care for non-Jews during the plague of 1630-1 had benefited the city.[57] The physicians also presented written statements from Christian 'gentlemen' and parish priests which supported their case. The *Sanità* relented and allowed all three to continue working 'as they did before, wherever they are called to provide care'. In 1688, following further discussion, four Jewish physicians (Cohen, Conegliano, Romanin and Silva) were all permitted by the *Sanità* to work beyond the Ghetto.[58]

As noted earlier, the *Necrologi* exclude deaths in the Ghetto. Although there are only a handful of references to Jewish physicians in the *Necrologi*, they are sometimes identified by the label *ebreo* (Jew). In 1646, Valenzo worked in S. Geremia, and Chabili's clients in S. Geremia and S. Lucia included a boatman suffering from fever and spots. In an Inquisition trial from 1661, a Jewish witness named Moyses Corcos revealed that Jewish physicians included Cabib, Valenzo, Silva and Olivier. When asked if there were also surgeons in the Ghetto, he replied that the aforementioned Valenzo practised surgery and that one of Valenzo's relations had let blood from Corcos himself.[59] The Jewish community of around 2,700 was therefore well furnished with medical practitioners, who also worked beyond the Ghetto. In 1676, Silva was active in the parishes of S. Geremia, S. Marcilian and S. Marcuola.[60] Both Mugia and Conegiano worked in S. Geremia in 1696, the latter treating a ten-year-old with fever. Jewish physicians therefore worked exclusively in the district of Cannaregio, in which the Jewish Ghetto was located. There are no references to the Jewish identity of practitioners in the eighteenth-century registers which have been sampled, which could either reflect a focus on occupational identity or greater restriction of the activity of Jewish physicians.

The number of *medici* in Venice can be estimated using the number of different individuals who are named in the *Necrologi*. This method underestimates the actual number of *medici* for two reasons. First, it excludes any physicians who were not named in the sample. Second, other sources reveal that a number of physicians had the same surname (and in one instance, also the same first name) as another practitioner, and it is impossible to differentiate between them when only the surname is provided, as in most entries for 1645,

[55] David Chambers and Brian Pullan (eds), *Venice: A Documentary History, 1450-1630* (Oxford: Blackwell, 192), p. 340.
[56] ASV, *Sanità*, B. 739, 11 April 1642a; 11 April 1642b; 12 April 1642.
[57] By comparison, in seventeenth-century London, irregular practitioners used their work during plague epidemics as justification to continue to practise thereafter. See Patrick Wallis, 'Plagues, Morality and the Place of Medicine in Early Modern England', *English Historical Review* 121 (2006), pp. 13-14.
[58] ASV, *Sanità*, B. 85, 5 October 1688, 26 November 1688.
[59] ASV, *Santo Ufficio*, B. 107, Menachem Coen et al., 6 July 1661.
[60] ASV, *Sanità*, B. 887.

1696 and 1746. Table 4 demonstrates that both the total number of *medici* and the ratio of *medici* to population peaked in 1696, and showed a slight increase over the full period of study. According to these calculations, the number of *medici* per 1,000 population was 0.71 in 1645, 0.91 in 1696, and 0.78 in 1746 and 1796.

A 1646 list of members of the Venetian College of Physicians provides some sense of the level of underestimation. In this year, the College comprised 58 members, divided into two lists of 51 active members, and 7 whose inactivity was explained in four cases as due to absence from the city, and otherwise due to decrepitude, paralysis and exile.[61] The 1645 sample includes 38 names from the 'active' list, and the decrepit Hetor Agapito. The College list reveals that four of the names refer to two or more individuals (Benzon, Busti, Cerchiari, and Fuoli), who were variously father and son, unrelated, father, cousin and son, and uncle and nephew. Since 38 out of 51 active members of the College feature in the sample, we can apply an inflation factor of 1.34 to the number of observed practitioners (see table 5). This calculation indicates that there were 0.96 *medici* per 1,000 population in 1645, 1.21 in 1696, and 1.04 in 1746 and 1796. The density of *medici* was far higher than in eighteenth-century French provincial cities, but comparable with the level of provision in other large urban centres in Italy.[62] In Rome, for instance, the number of physicians per 1,000 population was 1.17 in 1656.[63] In Bologna, Gianna Pomata calculated doctors per 1,000 population at 0.68 in 1630, 1.03 in 1659, 1.26 in 1683, 1.66 in 1698, 1.41 in 1727, 1.55 in 1744 and 2.04 in 1772.[64] The increased density of doctors in Bologna suggests a parallel growth in medical consumption.

The death registers permit consideration of the geographical distribution of medical practice, since they record the parish of residence of the deceased. An exception is deaths from drowning, when the deceased was unknown, where the location and parish to which the corpse had been brought – often the Piazzetta at S. Marco – is given.[65] Occasionally the *Necrologi* record instances where the death had occurred elsewhere in Venetian territory, and the body had been brought back to the city for burial.[66] Venice remained the most densely populated city in the Italian peninsula in the eighteenth century, with around 325 inhabitants per hectare. Nonetheless, the city's seventy parishes varied considerably from each other in terms of population, area, the ratio of men to women, and density of population (highest in central parishes, and in certain locations on the periphery namely S. Nicolò and the Ghetto).[67] Monica Chojnacka found that some neighbourhoods contained 'distinct pockets of widows'.[68] There is evidence of medical activity in all of the city's parishes. The frequency with which the deceased had consulted a *medico* is best analysed

[61] BMC, *Codice Cicogna* 2533.
[62] Matthew Ramsey, *Professional and popular medicine in France, 1770-1830: The social world of medical practice* (Cambridge: Cambridge University Press, 1998), p. 59.
[63] Gentilcore, *Healers and Healing*, p. 68.
[64] Gianna Pomata, *Contracting a Cure: Patients, Healers, and the Law in Early Modern Bologna* (Baltimore: The Johns Hopkins University Press, 1998), p. 58.
[65] Deaths attributed to the parish of S Marco also included those who had died in prison.
[66] See, for example, ASV, *Sanità*, B. 900, 6 July 1696, 4 February 1696. These do not particularly complicate the analysis as often medical care which they had received in the city of Venice itself is recorded.
[67] Beltrami, pp. 41-43, 48.
[68] Monica Chojnacka, *Working Women of Early Modern Venice* (Baltimore, The Johns Hopkins University Press, 2001), p. 80.

by categorising parishes by geographical location, in view of the sample size. Recourse to medical care was more common in central parishes than at the periphery (see table 6). Many of the peripheral parishes had large populations and a less wealthy social profile.[69]

The geographical range of individual practitioners can be analysed (see table 7). In 1645, the majority of *medici* worked in multiple, non-contiguous parishes. The range of practice seen in the 1645 sample is also apparent in records from Inquisition trials. When medical practitioners were called as witnesses, their parish of residence was noted. Thus we know that in 1632, the *medico* Giacomo Griffoni treated a patient in his own parish of S. Soffia.[70] The same Griffoni is listed as a member of the College of Physicians in 1646, and was at work in the parishes of S. Soffia, neighbouring S. Apostoli and nearby S. Bortolamio in 1645. Michel Angelo Rota was resident in the parish of S. Apostoli in 1639, a member of the College of Physicians, and active in 8 different parishes in 1645, including S. Apostoli.[71] In the mid seventeenth century, therefore, proximity was important, but reputation also played a part in a client's choice of practitioner. In 1645, Rota was 56 years old and his experience and perceived expertise led to him travelling to the parishes of S. Croce and S. Pietro at opposite ends of the city.

The total number of parishes in which the average *medico* worked decreased steadily across the period.[72] In 1645, 42% of *medici* provided care in three or more parishes, but this had decreased to 23% by 1796. The contiguity of parishes also increased steadily (see table 8). In 1645, only 48% of *medici* operated in contiguous parishes, but this had increased to 70% by 1796. When a *medico*'s parishes were not directly contiguous, moreover, they were usually located very close to each other. At times the connection was simply broken by the Grand Canal, a reminder of how people travelled by boat as much as on foot. By the end of the eighteenth century, therefore, the *medico* was more emphatically a local practitioner.

Two further types of practitioner appear in the *Necrologi*. The small number of allusions to a male nurse (*infermier*) all come from 1796 and refer specifically to the nurse of the Capuchin friars on the Giudecca. This nurse provided care to both the friars and the laity on the Giudecca, in line with the simplicity and austerity of the order which may have deterred its members from seeking care from a physician, and consistent with the order's reputation for caring for the sick. Nursing care was provided in other settings in early modern Venice, notably in the city's main hospitals. Its limited presence in the death registers reflects how a *medico* had often also seen the patient in these settings, and the greater interest of the *Sanità* in the trained practitioner's presence.

References to midwives (*comare* or *allevatrice*) increase from 2 in 1646 to 220 in 1796 (see table 1). Evidence from 1796 demonstrates that the terms were used interchangeably in referring to named individuals. The knowledge and expertise of midwives was valued and exploited by both the Church and the Venetian Republic.[73] Even prior to the Council of

[69] For evidence of a higher proportion of *popolani* on the periphery, see Beltrami, p. 47.
[70] ASV, *Santo Uffizio*, B. 89, Giovanni Battista Bonaventura, testimony of Giacomo Griffoni, 19 October 1632.
[71] ASV, *Santo Uffizio*, B. 95, Girolama Baglioni, testimony of Michel Angelo Rota, 1 February 1639.
[72] The instance of 13 parishes in 1645 corresponds to the work of the Cerchiari family, not an individual.
[73] See also Nadia Maria Filippini, 'Levatrici e ostetricanti a Venezia tra Sette e Ottocento', *Quaderni storici* 58 (1985): 149-180; Nadia Maria Filippini, 'The Church, the State and Childbirth: The Midwife in Italy during the Eighteenth Century', in Hilary Marland (ed.), *The Art of Midwifery* (London: Routledge, 1993), pp. 152-75.

Trent's 1563 decree on baptismal registers, Giovanni Trevisan, the patriarch of Venice, had required midwives to notify parish priests of births which they had attended to facilitate the prompt administration of the sacrament of baptism.[74] Midwives often acted as godmothers and the *Necrologi* indicate that they performed emergency baptisms.[75] Midwives thus had responsibility for the spiritual as well as the medical welfare of neonatal infants. 71 different midwives are named in the 1796 register. 38 (54%) worked in a single parish (see table 9).[76] When midwives assisted women and infants in multiple parishes, these were invariably in close proximity. Throughout the early modern period, midwives also played an important role as expert witnesses in trials conducted by both Church and state, where examination of female bodies was necessary.[77]

The *Sanità* regulated the practice of midwifery, and its provisions indicate a desire to uphold the quality of the care which they offered. A decree of 1624 complained how 'many women and their children are frequently placed in a bad situation at the time of childbirth with the loss of bodies and souls of a countless number of infants, due to the inexperience of many women who work as midwives without having the necessary practical knowledge and experience'.[78] The decree reminded midwives that they required a licence to practise in the city, which was supplied free of charge after an examination by a physician and two qualified midwives had established their competence. Concerns about the 'important task' of midwifery were reiterated in 1689, by which time would-be midwives were expected to be literate, and were tested on the text 'della Commare', Scipione Mercurio's *La commare o raccogliatrice*, which was first published in 1595. They were also required to have attended public anatomy demonstrations on the uterus and female genitalia for two years, and required a sworn statement from a licensed midwife that they had assisted them in practical care for two years. Finally they were subject to an examination by the *protomedico* in the presence of the Priors of the Colleges of Physicians and Surgeons and two midwives.[79] In 1695, the *Sanità* sought to draw on the relationships between parish priests and midwives engendered by ecclesiastical requirements, in order to identify women who were practising midwifery without a licence. Parish priests were required to provide a written statement of all births in their parish on the first of each month, and to include the name of the midwife in attendance at each birth.[80] Yet this provision does not explain the increased presence of midwives in the later *Necrologi*. Throughout the period, midwives were regulated and their gynaecological and obstetric expertise was acceptable as evidence in court cases. Unease about their work did not escalate in the late eighteenth century, and the *Sanità*'s concerns were in any case confined to the activity of unlicensed midwives.

An analysis of *Necrologi* entries where a midwife is recorded reveals that the growth in the presence of midwives in the registers is the effect of an expansion in the scope of the

[74] Hacke, *Women, Sex and Marriage*, p. 156.
[75] On Venetian midwives acting as godmothers, see Jean-François Chauvard, 'Madrine, commari e levatrici. Donne e parentela spirituale a Venezia nella seconda metà del Cinquecento', in A. Bellavitis, N.M. Filippini and T. Plebani (eds), *Spazi, poteri, diritti delle donne a Venezia in età moderna* (Verona: QuiEdit, 2012): 181-195.
[76] By comparison, 49% of *medici* worked in a single parish in this year.
[77] Daniela Hacke, *Women, sex and marriage in early modern Venice* (Aldershot: Ashgate, 2004), pp. 155-159; Pastore, pp. 161-163.
[78] ASV, *Sanità*, B. 739, 25 February 1624.
[79] ASV, *Sanità*, B. 85, 27 September 1689.
[80] ASV, *Sanità*, B. 86, 12 September 1695.

medical care which they provided. Midwives increasingly provided care for infants for a longer period after birth (see table 10). In the register for 1656, in which references to midwives are more numerous than that for 1646, 87% of entries naming a midwife relate to infants aged 1 month or younger, compared to 58% of entries in 1796.[81] The focus of seventeenth-century midwives on newborn infants is confirmed by an Inquisition trial from 1638. One of the witnesses, a 46-year-old midwife named Pasquetta, who was married to an Arsenal caulker, had recommended a female healer to the parents of a young boy suffering from a cough, rather than treating him herself.[82] The broadening of midwife activity is highlighted by scrutiny of older patients who they had treated. In 1656, 9% of midwife activity involved infants aged between 1.5 and 6 months and 4% of their activity related to two children in the sample aged 2 and 4 years. In 1796, by contrast, the older group was more numerous. 18% of midwife activity related to infants aged between 1.5 and 6 months, and 23% related to those older than 6 months. Midwives thus offered medical care in situations beyond the act of childbirth, often in cases of convulsions and smallpox. By the late eighteenth century, midwives frequently treated children aged over a year. As people became more inclined to seek medical care when sick, therefore, they also became more likely to do so for their young children (see table 11). If we study practitioner presence in the 13-60 month cohort for 1796, we see that they obtained this care from both midwives (19% of all deaths) and *medici* (24%).

3. Medical care and patient identity

Death registers provide detailed information about many aspects of the deceased's identity, including age, gender, social status, and religion. We can therefore explore how these factors affected recourse to medical care in more depth. Age had a strong influence on whether or not an individual received medical care. As we have seen, a substantial and growing proportion of adults had seen a *medico*. The very high level of provision indicates that the cost of medical care was not a deterrent, and that people sought medical advice not just when sick, but when they believed they were dying. The shift in behaviour is especially striking amongst the elderly. As Figure 1 shows, not only did the uptake of medical care by the over 55s increase consistently over time, but the increased rate of uptake was particularly marked amongst the very elderly.

By contrast, medical care was only sought for infants in exceptional cases, throughout this period. Levels of infant mortality were consistently high in the data sampled, and did not vary considerably.[83] Medical care was rarely utilised for young children, and it was less intensely used for children aged 6-14 than for adults (see table 11). These findings fit well with the recent arguments of Hannah Newton about the treatment of sick children. Newton has rightly claimed that the evacuative and surgical remedies which were commonly used to treat illness in adults were viewed with caution when it came to infants and children, for

[81] ASV, *Sanità*, B. 878. Sample of 682, comprising all deaths in March, July and November 1656. Midwives are named in 53 entries (a further entry where a woman died in childbirth has been excluded).

[82] ASV, *Santo Uffizio*, B. 95, Girolama Bordoni, testimony of Pasquetta Comare, 23 November 1638.

[83] For further statistics on age and infant mortality, see Beltrami, pp. 160-63, 168-73. Beltrami's calculations of infant mortality during the seventeenth and eighteenth centuries actually show that infant mortality was consistently and considerably higher from 1740 onwards. If Beltrami's statistics are aggregrated, mean infant mortality was 28.54% between 1600 and 1730, and 37.94% between 1740 and 1797. The incidence of smallpox is a likely explanation for this shift. See Beltrami, pp. 160-161.

whom gentle remedies were deemed more appropriate given their constitutions.[84] Prior to weaning, moreover, the mother might be treated, rather than the infant. The minimal use of *medici* for infants and young children in Venice thus reflects contemporary beliefs that the physician had little to offer them, rather than a lack of interest in the welfare of the young.

Social status also had an effect on whether an individual received medical care. The Venetian social order comprised three groups: *nobili* (patricians), *cittadini* (citizens), and *popolani*. The proportion of patricians in the population declined from 3.7% to 2.5% between 1642 and 1797, while the *popolani*'s share rose from 88.6% to 93.6%.[85] The individuals recorded in the death registers cannot be neatly categorised in this way, however, because the realities of social status in Venice were more complex, due to variations in wealth within these groups, the admittance of new families to the patriciate from 1646, and the presence of large numbers of immigrants and foreigners in the city.[86] Certain non-nobles, such as apothecaries and merchants, were perceived to be high status, and accorded a corresponding title. For these reasons, this study uses titles given in the *Necrologi* to code the status of individuals (see table 12 for details). Due to status variations within the male and female religious, which are not consistently indicated in the *Necrologi*, this group is coded as 'religious'.[87] Individuals have been classed as 'high status' if they have a high status title, or a high status husband or father is named. This avoids skewing the analysis of status towards adult males.

The male and female religious were highly likely to have seen a *medico* throughout the period. *Medico* presence has been assessed for all high and low status individuals, as well as for adults (>25 years). In both cases, those of higher status were more likely to have been attended by a *medico* throughout the period, although the gap was much narrower by 1796. It should nonetheless be emphasised that almost all adults of high status had seen a *medico* from 1696 onwards.

Equally, the widespread use of *medici* by those of lower status merits emphasis and explanation. There is some evidence of variable payments for care, depending on the wealth of the patient or their family. In July 1677, the College of Surgeons provided a report to the *Giustizia Vecchia*, the magistracy which regulated commerce and administered civil justice. The College of Surgeons had been asked to adjudicate between a physician-surgeon, Marc'Antonio Calzarello, and a boat official, Liberal Calalin, about the amount of recompense for the treatment of Calalin's father for gangrene of the testicles, over a period of sixty five days.[88] The College decided that forty ducats was appropriate, but commented that they had taken the poverty of the patient into consideration, and stated that if justice

[84] Hannah Newton, *The Sick Child in Early Modern England, 1580-1720* (Oxford: Oxford University Press, 2012), pp. 70-71.
[85] Beltrami, p. 72.
[86] In view of high levels of immigration it is difficult to differentiate 'Venetians' from 'foreigners'. Nonetheless, where an occupation is not stated in the 1645 data, a substantial number of individuals have surnames which are not obviously Venetian or which explicitly indicate a place of origin.
[87] For evidence of the noble or high status of many in Venice's religious institutions, see Mary Laven, *Virgins of Venice: Enclosed Lives and Broken Vows in the Renaissance Convent* (Viking: London, 2002), pp. 48-49.
[88] BNM, Italiani VII 2339 (=9671), 2 July 1677. Only a handful of documents survive which record arbitration of this kind.

was rigorously applied, then Calzarello would deserve a far greater sum. Variable fees made medical care more accessible to lower status individuals.

Gender had a limited effect on recourse to medical care. Slightly more women than men lived in Venice. Women comprised 50.7% of the population in 1642, 50.4% in 1760 and 51.1% in 1790.[89] By contrast, a greater number of men than women are recorded as dying in the *Necrologi* (see table 13). This can partly be explained by the inclusion of the deaths of non-resident soldiers in these records (9 in 1645, 21 in 1696, 11 in 1746, 84 in 1796). The substantial number of soldiers in 1796 (10% of the sample) inflates the percentage of men who had been seen by a *medico*, due to provision of medical care in the institution in which they were stationed. This figure aside, there are no significant differences in the proportion of men and women who had been seen by a *medico* prior to their death. Although the sources do not disclose whether there was any gender variation in the regularity of visits, Wendy Churchill's argument that British women consulted medical practitioners more frequently than men is not supported by the Venetian evidence.[90]

Although a significant number of non-Catholics resided, visited and died in the city, it is difficult to assess whether medical care varied on the basis of religion. In 1671, parish priests were specifically asked to report the deaths of Christians who were not Catholics to the *Sanità*, and the *Necrologi* therefore include the deaths of Protestants and Greek orthodox.[91] In each case, however, the absolute number of deaths is too small to permit meaningful analysis.[92] From August 1631, the *Sanità* maintained registers of non-Christian deaths, which contained deaths of Jews at the front of the volume, and deaths of Turks at the rear.[93] The number of dead Turks was also small.

More can be said about Jewish medical care. The heads of the Jewish community, like parish priests, were obliged to inform the *Sanità* of any Jews who fell sick or died in the Ghetto. The Jewish Ghetto had been established by a decree of 29 March 1516. Almost immediately thereafter, on 14 April 1516, the community was first informed of the reporting requirement.[94] The 1661 witness statement of the aforementioned Moyses Corcos, a seventy-year-old Jew who had been born in the Venetian Ghetto and had lived there all his life, revealed that the Jewish community maintained a book which registered the details of Jews who died, and which corresponded to the *Sanità*'s register. The Inquisition asked Corcos whether Jews who fell sick were treated by Christian or Jewish practitioners. Corcos informed them that this was an arbitrary matter, but that for the most part Jewish physicians were consulted.[95] This is supported by an analysis of the non-Christian *Necrologi*, in which Jewish practitioners are named in the entries for 1696 and 1746 (see table 14). Records from 1796 do not survive, and entries from 1645 do not indicate practitioner

[89] Beltrami, p. 80.
[90] Wendy Churchill, *Female Patients in Early Modern Britain: Gender, Diagnosis and Treatment* (Farnham: Ashgate, 2012).
[91] Beltrami, p. 22.
[92] Beltrami, pp. 118-123. See also Chryssa Maltezou and Georgios Ploumidis (eds), *Gli atti di morte dei Greci nell'archivio della chiesa di Sant'Antonin di Venezia (1569-1810)* (Venice: Istituto Ellenico, 2001)
[93] ASV, *Sanità*, B. 996, 997 and 998. This development was likely inspired by an interest in Jewish mortality during the plague of 1630-1.
[94] Beltrami, p. 18.
[95] ASV, *Santo Ufficio*, B. 107, Menachem Coen et al., 6 July 1661.

presence. For the central years of this study, however, we find a level of *medico* presence which significantly exceeds recourse amongst the Christian population, as well as a high and increasing level of midwife activity. By 1746, 96% of deaths include a named practitioner, demonstrating the high value placed on medical care by the Jewish community.

4. Institutional care

The existence in Venice of institutions which offered medical care heightened levels of medical engagement. The vast majority of entries in the *Necrologi* state the parish of residence of the deceased. The remaining entries instead specify some of the city's hospitals as the location of death. These locations include the city's four main hospitals, the Incurabili, Ospedaletto, Mendicanti and Pietà, which were known as the *Ospedali Grandi*. The registers also mention the hospitals of S. Antonio and SS. Pietro e Polo, institutions at the far edge of the district of Castello. These hospitals offered care to soldiers, necessitated in large measure by war with the Ottoman Empire in 1645-1669, 1684-1699 and 1714-1718. Finally, S. Servolo was an island situated midway between the Lido and the city, which was brought into use in the early eighteenth century to expand provision for sick and injured soldiers. Almost everyone who died in a hospital in the eighteenth century had been seen by a *medico* (table 15). The level of recorded medical care is high at the Mendicanti and Pietà in the seventeenth century, but low at the Ospedaletto and absent at the Incurabili. This pattern is at odds with the intended medical function of the latter two institutions, and may result from recording practices which assumed care in these settings.

The very presence of these hospitals in the *Necrologi* indicates that the Republic considered them to be medical institutions. Those who died in religious institutions, smaller hospices or comparable charitable institutions (notably those for women such as the Zitelle and Penitenti) were recorded under their parish rather than institution of residence.[96] Both the *Ospedali Grandi* and soldiers' hospitals had large and fluid populations, and recording practices ensured that an outbreak of epidemic disease would swiftly come to the attention of the *Sanità*. All the hospitals which appear in the *Necrologi* had organised medical provision.[97] The *Sanità* stipulated that all new arrivals at SS. Pietro e Polo were to be examined by a *medico*, and the diet of convalescing patients was only to be changed on his orders.[98] When the hospital of S. Antonio was reopened in 1694, the Senate decreed that it was to be fully equipped with a *medico*, nurses, assistants and medicines.[99] Each of the four *Ospedali Grandi* had one or more infirmaries, and employed resident nurses and non-resident practitioners, including a *medico*. Competition for the post of *medico* could be fierce.[100] Successful candidates had previously worked in the city and continued to do so after their appointment. Although patricians participated in the governance of the *Ospedali Grandi*, they remained independent institutions until 1777, when financial crisis led to a

[96] For Venice's hospices, see Franca Semi, *Gli 'Ospizi' di Venezia* (Venice: Edizioni Helvetica, 1983). On the Penitenti, see McGough, pp. 128-133.

[97] The records of these hospitals have been dispersed, and survival is patchy. On medical care in the hospitals, in the sixteenth century see Palmer, 'L'assistenza medica'.

[98] ASV, *Sanità*, B. 740, 5 February 1648.

[99] ASV, *Sanità*, B. 18, 3 March 1694.

[100] See, for instance, Istituzioni di Ricovero e di Educazione Venezia (IRE), *Mendicanti* B2, 28 March 1650 and 4 April 1650; Nelli-Elena Vanzan Marchini (ed.), *La memoria della Salute: Venezia e il suo ospedale dal XVI al XX secolo* (Venice: Arsenale Editrice, 1985), p. 157.

state bailout, and the hospitals' administration was placed under the supervision of the *Provveditori sopra ospedali e luoghi pii*, the magistracy responsible for charitable institutions.

In theory, each hospital catered to a specific group: those suffering from incurable diseases, the sick, the poor and orphans. In practice, the clientele of each hospital was more diverse. The Mendicanti, for example, which was responsible for the poor and elderly, also provided short-term treatment for scabies. It had separate infirmaries (for both men and women) for those suffering from scabies and other illnesses, as well as a ten bed room for the mentally ill.[101] The nature of medical provision at the hospitals also changed over time. From 1768, smallpox inoculation was practised at the Mendicanti, and the *Sanità* encouraged fathers to present themselves at the hospital with their small children.[102] During the eighteenth century, San Servolo began to care for the mentally ill, although almost all deaths on the island in 1796 were specified to be of soldiers.

The perceived quality of care in the hospitals was such that a smattering of patients (or their families) paid to be admitted and for their continuing care, including at least three noblewomen.[103] All the same, hospitals mainly enabled those who could not afford medical care to receive it. Care was even provided to prisoners in an infirmary in the prisons at S. Marco.[104] Yet pragmatism jostled alongside Christian duty. The Republic repeatedly passed legislation which ordered the foreign poor to leave the city.[105] Yet many patients at the Ospedaletto and Mendicanti (where records best survive) were not of Venetian birth. The foreign poor often lacked family support and personal networks as well as financial resources. The Mendicanti's records indicate that when foreigners were admitted to the institution, it was often for scabies treatment.[106] This approach was designed to limit the spread of this highly contagious condition to Venetians.

Non-residential institutions also facilitated access to medical care, although the surviving evidence is fragmentary. The Scuola Grande di S. Giovanni Evangelista, one of the city's six major confraternities, suspended the salaries of its two contracted physicians in 1648 because 'this expenditure is superfluous, because the brothers are assisted by their guilds'.[107] We do not know the names of these physicians, but the geographical scope of their activity would doubtless have been broad, since the *scuole grandi* drew their membership from across the city. The *Necrologi* document how *scuole grandi*, *scuole piccole* ('lesser confraternities' which often had an occupational focus), and guilds frequently paid for the funerals of lower status individuals.[108] Examples of such payments from 1796 indicate that these institutions continued to support their members until the end of the Republic. It is credible that they also supported their members when sick, by contributing to

[101] ASV, *Ospedali e luoghi pii diversi*, B. 609, fasc. 2, 16 maggio 1675.
[102] Vanzan Marchini, *La memoria della Salute*, pp. 43-45.
[103] IRE, *Mendicanti* B1, 29 March 1632; *Mendicanti* B2, 18 April 1662; *Mendicanti* B2, 21 December 1743.
[104] ASV, *Sanità*, B. 873.
[105] See, for example, ASV, *Sanità*, B. 741, 27 May 1654.
[106] IRE, *Mendicanti* B2.
[107] Brian Pullan, *Rich and Poor in Renaissance Venice: The Social Institutions of a Catholic State, to 1620* (Oxford: Basil Blackwell, 1971), p. 98.
[108] On the earlier activity of the *scuole piccole*, see Francesca Ortalli, *'Per salute delle anime e delle corpi': Scuole piccole a Venezia nel tardo medioevo* (Venice: Marsilio, 2001).

payments for medical care, even if they no longer retained and supplied a specific practitioner. When servants died, their burials were often paid for by the head of the household in which they had worked. Decisions to call for a medical practitioner and payments for care may also have been taken and made by their employers. Furthermore, charitable bequests enhanced access to medical care in local settings. The generous bequest of Antonio Gatto, parish priest of San Polo in the early seventeenth century, enabled a physician (*medico phisico*) and barber to be paid to treat the sick poor of the parish and four neighbouring parishes for many years after his death.[109] Gatto also made provision for the costs of medicines ordered by the doctor. Patronage, networks, employment and charity thus all contributed to high levels of medical engagement.

5. Medical care and illness

Cause of death data can be analysed to see what kinds of illnesses and health problems led people to summon a *medico*. The entire sample contains 169 different causes of death. Most entries provide a single cause of death, but 28% of entries provide a second contributing cause, and 2% of entries contain a third cause.[110] All causes have been analysed, with no weight given to the order of causes. The number of distinct causes increases over time, with 66 in 1645, 72 in 1696, 80 in 1746 and 110 in 1796. It thus appears that practitioners and parish priests responded to the appeal of the *Sanità* in 1731 for more precise information on cause of death. In some entries a chronic long-term illness is given as well as a short-term cause of death and both pieces of information have been coded.

Despite the variety of stated causes, there were limited changes in the attributed causes of death during this period, and 15 causes comprise 75% of all deaths in the sample (see table 16). Fever was the most prominent cause of death throughout the period. Venetians differentiated between fever, malignant fever and continuous fever in 1645, and types of fever proliferated in the eighteenth century. *Spasemo* also caused significant mortality. This condition almost exclusively affected young infants. Spasms were its main symptom, and it was differentiated linguistically from convulsions. It is likely that today the condition would be diagnosed as tetanus, which still causes significant neonatal mortality in the developing world through infection of the cut umbilical cord.[111] Entries in which the deceased had 'been born and died immediately', coded as 'death at birth', are also numerous. The *Necrologi* record stillbirths differently, and occasionally specify the gestational age of the foetus in months in these cases. All the same, the number of 'deaths at birth' may be slightly inflated by the religious imperative to baptise a living infant. Smallpox also caused substantial mortality, and mainly affected children. A couple of soldiers who contracted the disease as adults in 1796 had likely not been exposed to the disease as children. Smallpox was endemic in Venice throughout the early modern period, although it reached epidemic proportions in some years, including 1570 and 1676. The frequency of these epidemics increased in the eighteenth century, and stimulated greater interest in the disease amongst

[109] On Gatto's bequest, see Emma Jones, 'Priestly patronage in late Renaissance Venice: Antonio Gatto's cappella maggiore in San Polo', in Peta Motture, Emma Jones and Dimitrios Zikos (eds), *Carvings, Casts and Collectors: The Art of Renaissance Sculpture* (V&A Publishing, 2013), p. 224. I am very grateful to Emma Jones for sharing further details of the bequest with me.

[110] These proportions do not change significantly over time.

[111] Neonatal tetanus is responsible for 7% of all neonatal mortality worldwide. See Joy E. Lawn et al., '4 million neonatal deaths: when? Where? Why?', *The Lancet* 365 (2005): 891-900.

physicians and the *Sanità*.[112] 'Old age' was a common cause of mortality in the seventeenth century, and its diminished frequency thereafter may result from the greater propensity of the elderly to seek medical care in the eighteenth century. Respiratory conditions are a final set of causes of death which are particularly noteworthy in terms of number, and included catarrh, pleurisy and tuberculosis. Conditions which affected the chest and lungs were increasingly described with a wide range of terminology, especially in the later eighteenth century.

Table 16 shows how there was a strong correlation between *medico* attendance and some causes of death, and a weak correlation in other cases. In 1645 we should note the readiness to consult a *medico* in cases of malignant fever, dropsy, pleurisy and tuberculosis. The data also indicates a hierarchy of fevers, whereby malignant fever caused more concern than continuous fever and simple fever. It is interesting that a *medico* often visited women who died in childbirth, which suggests that a midwife's care was not thought sufficient if a woman began to experience difficulties. Over time, a *medico* was increasingly consulted in cases of continuous fever and apoplexy, and for the care of chest and lung conditions. There is no notable connection between specific practitioners and certain causes of death, with the exception of wounds. Some causes of death with low levels of *medico* presence, notably accidents and violence, are unsurprising. Otherwise, these causes are mostly diseases of infancy and childhood, including *spasemo*, measles and worms. Although there is a small increase over the course of this period, a *medico* was rarely consulted in cases of smallpox, and medical publications about this disease focused on inoculation rather than treatment.[113] Age and cause of death were thus interlocked in driving recourse to medical care.

The interest of the *Sanità* in length of illness was propelled by its value in identifying potential cases of plague. It was recorded mostly in days and months, but also in hours and years. In around one third of entries it is not given or specified imprecisely as 'for a long time', 'for many months', or in many cases of neonatal mortality as 'always'. Where length of illness is not specified, a *medico* was much less likely to have attended the deceased. Otherwise, there is no significant connection between length of illness and *medico* presence (see table 17).

Conclusion

Death registers expose the high and increasing level of medical consumption in early modern Venice, especially for adults, high status individuals, and those in hospitals, religious institutions and the Ghetto. Financial considerations did not deter people from seeking medical care. Social networks and charitable provision ensured that medical treatment was available to all. Rather, the involvement of a practitioner was closely related to the age of the patient and the nature of the illness from which they suffered. The level of engagement exceeds that found in rural England, and is comparable with that in other major Italian

[112] See Nelli-Elena Vanzan Marchini, *I mali e i rimedi della Serenissima* (Vicenza: Neri Pozza, 1995), pp. 264-274.
[113] For instance, Francesco Vicentini, *Prima memoria intorno all'utilità dell'innesto del vaiuolo* (Venice: Pinelli, 1768).

urban centres.[114] Thus despite the shifting balance of political and commercial power in early modern Europe, Italy's longstanding medical traditions and dense urban networks energised the market for medical care. Most of this care was provided by a *medico*, a trained practitioner with expertise in physic or surgery.

These high levels of medical consumption did not signal the displacement of religion from the strategies of the sick, as Mortimer has argued was the case in seventeenth-century England.[115] Religious practices such as prayer and the administration of the sacraments were central to the daily rhythms of the city's hospitals, and religious orders played a major role in their administration. The Somaschians were resident at the Incurabili, Mendicanti and Ospedaletto, and the Fatebenefratelli offered care at S. Servolo. Charitable bequests underpinned hospital finances and funded care at the level of the parish. The *Necrologi* themselves demonstrate that Catholic beliefs and interest in the fate of the soul in the afterlife remained unswerving at the end of the eighteenth century. Whenever a newborn infant quickly succumbed to death, it was recorded that they had received the 'holy baptism', from the midwife when necessary. This sense of religiosity is enhanced by the phrase that the deceased infant had 'flown off to heaven' ('volò al cielo'), which first appears in 1796.

In the final years of the Venetian Republic, the amount of care provided by *medici* to adults, and increasingly by midwives to children, might imply that empirics and folk healers had been squeezed out of the medical marketplace by formally trained practitioners. The evidence suggests otherwise. Indeed, Venice's charlatans had so much business that they did not need to travel beyond the city to hawk their products, unlike their counterparts elsewhere in Italy.[116] Scholarship on the 'medical marketplace' and 'medical pluralism' suggests that people made a choice about what to do when sick, and that their decisions were influenced by a wide range of factors such as the availability, cost, gender and reputation of the healer; past experience; beliefs about disease causation; and the severity of the illness or condition.[117] This study has demonstrated that availability was not a significant factor in the Venetian context, because the city was awash with practitioners. Further, cost was a minor factor of decreasing importance, since community structures enabled free care for the poor. Moreover, personal accounts of sickness, whether in diaries or Inquisition records, suggest that the prominence of decision-making should be downplayed. When the sick did respond to illness, they did not always choose a single practitioner or treatment or make a series of decisions if the first was unsuccessful. More often, they engaged in a number of simultaneous activities. Prayer or the use of remedies bought from charlatans was not incompatible with visits from a *medico*.[118] This study has instead highlighted how the age and status of the sufferer were the dominant factors which

[114] Mortimer, pp. 12, 45. Walsham's work on the persistence of healing shrines indicates that religion did continue to play a major role in England. See Alexandra Walsham, 'Sacred Spas? Healing Springs and Religion in Post-Reformation Britain', in Bridget Heal and Ole Peter Grell, *The Impact of the European Reformation: Princes, Clergy and People* (Aldershot: Ashgate, 2008): 209-230.
[115] Mortimer, p. 208.
[116] David Gentilcore, *Medical Charlatanism in Early Modern Italy* (Oxford: Oxford University Press), p. 274.
[117] Gentilcore, *Healers and Healing*, p. 2.
[118] See Cecilia Ferrazzi, *Autobiography of an Aspiring Saint*, ed. and trans. Anne Jacobson Schutte (Chicago: University of Chicago Press, 1996), pp. 51, 57.

affected recourse to medical care, reminding us of the fundamental importance of patient identities in the social history of medicine.

Appendix

TABLE 1: References to practitioners in sample

Category	1645 N	1696 N	1746 N	1796 N
Barber	5	1	0	0
Medico	348	454	410	464
Midwife	2	19	78	220
Nurse	0	0	0	4
Surgeon	1	5	5	4
N with practitioner/s	321	439	492	689
% with practitioner/s	38.21	52.26	58.57	82.02
N with multiple practitioners	33	39	1	3
Total practitioner refs	356	479	493	692

TABLE 2: Categories of medical practitioners

Category	1645 labels	1696 labels	1746 labels	1796 labels
Barber	barbier	barbier		
Medico	medico	Eccellente, medico, medico L'Eccellente	Eccellente, medico	Dottor, Eccellente, Eccellente Dottor, Eccellente medico, Eccellente medico fisico, Eccellente medico fisico Dottor, medico, medico chirurgo, medico Eccellente, medico fisico, medico fisico e chirurgo, medico Illustrissimo Signor Dottor, medico l'Eccellente, medico militare
Midwife	comare	allevatrice, comare, levatrice	comare, levatrice	allevatrice, comare, comare levatrice, levatrice
Nurse				infermier
Surgeon	ceroicho	ceroico, chirurgo, norsino	chierurgo	chirurgo

TABLE 3: % of adults (>25 years) attended by *medico*

	1645	1696	1746	1796
N *medico*	251	311	338	348
N all	404	400	388	368
% *medico*	62.1	77.8	87.1	94.6

TABLE 4: Number of *medici* per 1,000 population

Year	N medico	Per 1,000 population
1645	86	0.71
1696	125	0.91
1746	116	0.78
1796	107	0.78

The calculation of number of *medico* per 1,000 population uses population data from 1642, 1696, 1760 and 1790 from Beltrami, p. 38.

TABLE 5: Projected number of *medici* per 1,000 population

Year	N medici	Per 1,000 population	N medici (inflated)	Per 1,000 population (inflated)
1645	86	0.71	115.24	0.96
1696	125	0.91	167.50	1.21
1746	116	0.78	155.44	1.04
1796	107	0.78	143.38	1.04

TABLE 6: Recourse to medical care by location of parish

Parishes	N sample	N med	%med
Central	639	316	49.45
Intermediate	898	419	46.66
Peripheral	1523	645	42.35

Parishes have been categorised as central, intermediate or peripheral with reference to their proximity to the commercial and political heart of the city which centred on the axis between the Rialto market and Piazza S. Marco, and corresponded closely with the geographical centre of the city.

Central parishes: S. Agostin, S. Anzolo, S. Aponal, S. Basso, S. Benetto, S. Bortolamio, S. Cassan, S. Fantin, S. Giminian, S. Giovanni Grisostomo, S. Lio, S. Luca, S. Marco, S. Maria Zobenigo, S. Marina, S. Mattio, S. Maurizio, S. Moisè, S. Paternian, S. Polo, S. Salvador, S. Silvestro, S. Zuanne di Rialto, S. Zulian.

Intermediate parishes: S. Apostoli, S. Barnaba, S. Boldo, S. Cancian, S. Felice, S. Fosca, S. Giacomo dal Orio, S. Gregorio, S. Maria Formosa, S. Maria Madalena, S. Maria Mater Domini, S. Maria Nova, S. Pantalon, S. Provolo, S. Samuel, S. Severo, S. Simeon Grande, S. Soffia, S. Stae, S. Stin, S. Tomà, S. Vidal, S. Zuan Degolà, S. Zuanne Novo.

Peripheral parishes: S. Agnese, S. Antonin, S. Basegio, S. Biasio, S. Croce, S. Euffemia, S. Geremia, S. Giustina, S. Lucia, S. Lunardo, S. Maria Elisabetta, S. Marcilian, S. Marcuola, S. Margarita, S. Martin, S. Nicolò, S. Pietro, S. Raffael, S. Simeon Piccolo, S. Ternita, S. Trovaso, S. Vio, S. Zuan Bragola.

TABLE 7: Range of *medico* activity: number of parishes

Area of activity	1645	1696	1746	1796
1 parish	39	59	58	52
2 parishes	11	27	29	30
3 parishes	10	15	16	17
4 parishes	9	19	10	7
5 parishes	5	3	3	1
6 parishes	4	0	0	0
7 parishes	1	0	0	0
8 parishes	2	2	0	0
9 parishes	4	0	0	0
13 parishes	1	0	0	0
Total named *medici*	86	125	116	107

TABLE 8: Range of *medico*: activity in contiguous parishes

Area of activity	1645	1696	1746	1796
1 parish	39	59	58	52
2 contiguous parishes	3	9	11	12
3+ contiguous parishes	0	2	5	11
Non-contiguous parishes	44	55	42	32
Total named *medici*	86	125	116	107

TABLE 9: Distribution of midwives in 1796

N parishes	N midwives
1	38
2	11
3	9
4	7
5	4
7	1
9	1

TABLE 10: Midwives and age at death

Year	N with midwife	0-1 month	1.5-6 months	> 6 months
1656	53	46	5	2
1796	219	128	40	51

TABLE 11: Age at death and recourse to medical care by age

Age	1645 N	1645 % *medico*	1696 N	1696 % *medico*	1746 N	1746 % *medico*	1796 N	1796 % *medico*
0-12	242	0.83	213	0.94	273	1.10	242	1.24

months								
13-60 months	88	9.09	90	22.22	100	9.00	133	24.06
6-14	49	34.69	52	59.62	32	59.38	30	60.00
15-24	52	65.38	79	67.09	44	86.36	64	95.31
25-34	67	56.72	59	86.44	44	81.82	46	93.48
35-44	89	66.29	72	65.28	32	75.00	60	98.33
45-54	66	80.30	65	75.38	48	93.75	61	91.80
55-64	55	67.27	78	83.33	58	87.93	50	94.00
65-74	65	61.54	63	88.89	85	92.94	86	96.51
75-84	39	41.03	43	74.42	91	89.01	52	92.31
85+	23	34.78	20	55.00	30	73.33	13	92.31
not known	5	60.00	6	66.67	3	33.33	3	66.67

TABLE 12: Status and *medico* presence

	1645 % *medico*	**1696 % *medico***	**1746 % *medico***	**1796 % *medico***
Religious	100.00	88.89	100.00	85.71
High status all	54.13	65.10	70.18	57.24
Low status all	32.62	46.04	45.96	54.15
High status >25	78.57	93.83	92.11	98.28
Low status >25	56.88	72.58	86.31	94.28

High status = NH (nobilhuomo), ND (nobildonna), Clarissimo signor, Illustrissimo Signor, Signor, Eccellente Domino.

TABLE 13: Gender and medical care

Year	**% Men**	**% Women**	**% Men + *medico***	**% Women + *medico***
1645	54.64	45.36	38.56	36.22
1696	52.98	47.02	50.34	49.37
1746	50.83	49.17	46.84	50.61
1796	57.38	42.62	59.54	49.44

TABLE 14: Jews and practitioner presence

Year	**N deaths**	**N midwife**	**N *medico***	**% *medico***	**% practitioner**
1645	72	0	0	0	0
1696	61	2	45	73.77	77.05
1746	46	9	35	76.09	95.65

All deaths in each year have been analysed.

TABLE 15: Hospitals and *medico* presence

Year	Incurabili	Ospedaletto	Mendicanti	Pietà	SS. Pietro e Polo	S. Antonio	S. Servolo	Total
1645 N	9	11	20	0	8	0	0	48
1645 % medico	0.00	0.00	75.00	0.00	87.50	0.00	0.00	45.83
1696 N	13	34	8	4	5	21	0	85
1696 % medico	0.00	2.94	100.00	100.00	100.00	61.90	0.00	36.47
1746 N	3	14	9	0	4	0	6	36
1746 % medico	100.00	100.00	100.00	0.00	100.00	0.00	100.00	100.00
1796 N	7	58	2	1	4	0	65	137
1796 % medico	100.00	100.00	100.00	100.00	100.00	0.00	96.92	98.54

TABLE 16: Cause of death and recourse to medical care

	% of deaths				% with medico				
	1646	**1696**	**1746**	**1796**	**1646**	**1696**	**1746**	**1796**	**All**
Spasemo	24.5	18.3	27.3	18.3	3.0	4.8	0.7	0.0	2.08
Fever	28.7	25.4	16.4	10.1	57.8	67.6	76.0	87.4	68.25
Smallpox	0.6	6.2	4.1	13.2	14.3	22.9	4.7	29.5	23.31
Malignant fever	4.1	8.8	3.4	1.0	93.3	93.9	74.3	81.8	89.47
Catarrh	9.7	4.2	1.9	1.1	66.0	85.1	65.0	91.7	72.43
Continuous fever	3.3	3.8	2.4	1.5	66.7	76.7	80.0	87.5	75.83
Death at birth	3.9	2.9	2.0	1.9	0.0	0.0	9.5	0.0	1.69
Apoplexy	1.6	2.2	3.5	2.3	58.8	84.0	89.2	96.0	84.62
Dropsy	2.2	1.9	2.7	2.0	79.2	85.7	96.4	100.0	90.53
Tuberculosis	0.7	2.4	3.6	1.8	75.0	96.3	94.7	95.0	93.55
Pulmonary	0.0	0.1	2.8	5.1		100.0	93.1	100.0	97.67
Pleurisy	1.6	2.0	3.8	0.4	77.8	95.7	92.5	100.0	90.59
Old age	1.9	2.5	1.5	0.0	23.8	50.0	50.0		41.54
Acute fever	0.0	0.0	2.3	3.5			95.8	97.4	96.83
Ulceration	0.8	1.1	0.9	1.6	11.1	16.7	100.0	100.0	62.50
N	**1091**	**1131**	**1043**	**1103**					

Causes of death have been translated maintaining the contemporary language or meaning wherever possible. Eighteenth- and nineteenth-century dictionaries and medical treatises have been utilised to identify more obscure causes of death.[119] It has not been possible to identify 1% of causes listed in the sample, and these have been coded as 'other'. In 1746 and 1796 there is a proliferation of cause of death as fever with multiple adjectives. These have been coded using the first adjective given. Contemporary understandings of tuberculosis changed considerably across the period, with corresponding shifts in the terminology used to describe the disease. The term used evolves from etica to etisia to tisi: all have been coded as tuberculosis, even if 'consumption' would be more appropriate as a translation of 'etica' on its own.

TABLE 17: Length of illness and recourse to medical care

Length of illness	**1645 N**	**1645 % *medico***	**1696 N**	**1696 % *medico***	**1746 N**	**1746 % *medico***	**1796 N**	**1796 % *medico***
1-3 days	25	20.00	16	62.50	6	83.33	19	78.95
4-6 days	25	64.00	56	53.57	43	69.77	61	80.33
7-9 days	73	47.95	99	63.64	75	68.00	123	56.10
10-12 days	66	62.12	59	61.02	59	52.54	60	73.33
13-15 days	71	42.25	68	54.41	48	62.50	53	67.92
16-18 days	18	61.11	22	54.55	17	70.59	28	85.71
19-21 days	30	46.67	32	78.13	25	60.00	31	87.10
22-31 days	84	45.24	71	61.97	43	62.79	43	72.09
32-41 days	11	72.73	20	80.00	8	100.00	22	90.91
42-51 days	9	44.44	2	50.00	3	100.00	7	100.00

[119] Especially Giuseppe Boerio, *Dizionario del dialetto veneziano* (Venice, 1856).

52-61 days	40	50.00	48	68.75	54	72.22	25	100.00
62-100 days	36	61.11	39	69.23	31	87.10	28	85.71
101-200 days	51	49.02	46	71.74	51	86.27	27	100.00
201-400 days	42	59.52	31	77.42	32	87.50	12	91.67
401 days +	32	46.88	20	55.00	24	83.33	16	87.50
not specified	227	2.64	211	8.06	321	12.15	285	14.39

Figure 1: Recourse to medical care by age