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Medical care in early modern Venice

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Abstract: In early modern Venice, a wide range and large number of people offered care to the sick. This study utilizes 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. Recourse to medical care was affected by age, social status and type of illness. A web of institutions increased levels of medical engagement amongst those of lower social status. Recourse to medical care by adults increased to a high level during the seventeenth century, and became near-universal by the end of the eighteenth century.

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 for 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 As Teerapa Pirohakul and Patrick Wallis demonstrate in this volume, there was a marked rise in medical engagement in seventeenth-century London, followed by substantial growth in the use of medical care in the mid eighteenth century in provincial southern England.⁷ In the Netherlands, a significant increase in the consumption of medical goods and services occurred during the eighteenth century in the provinces, especially in maritime areas.⁸ 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 center with a large and relatively affluent population. A sizeable number and wide range of people offered medical care, goods and services to the city's numerous inhabitants. The nearby medical school at the University of Padua provided a ready supply of educated physicians and surgeons.⁹ 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 the city, and four major hospitals were founded or re-founded over the course of the sixteenth century.¹⁰

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 utilizes 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 population¹¹, 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.¹² The sources compare favorably 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 and a significant increase in recourse to medical care across the period studied. These findings underline the perceived value of *medical* care in early modern Europe, despite the focus of much recent scholarship on domestic medicine and self-help.¹³ The sources suggest that the political and medical elites viewed physic, surgery and midwifery as the three predominant forms of medical care at this time. The fragmented and fleeting references to nursing in the sources indicate that it was perceived as a different – albeit related – category of activity. The detailed death 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. Age, social status and type of illness affected recourse to medical care. Hospitals and confraternities made important contributions to raising levels of medical engagement.

1. Death registers

The Venetian Republic took an interest in population data as early as 1338, when the city's first official census was conducted.¹⁴ On August 21, 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 – particularly deaths – to the scribe of the *Sanità*, and no one was to be buried without a burial license from the magistracy.¹⁵ Further legislation followed. From 1540 parish priests were fined one ducat if they buried any corpse without having notified and received a burial license from the magistracy.¹⁶ A decree of December 5, 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 license would be released: name, surname, age, length of illness and nature of illness.¹⁷ On June 11, 1563 it was decided that licenses 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 license.¹⁸ 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.¹⁹ 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.²⁰ 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 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.²¹ 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. On April 27, 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.²² Venice’s civic death registers 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.

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 May 4, 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 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 Recording the name of any practitioner who had treated the sick facilitated the task of the *protomedico* charged with monitoring sudden deaths.

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 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. Frequently an entry 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’s father 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 were 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 were 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 1796.²⁷ 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 minimize 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.²⁸ The Venetian Republic was highly bureaucratic and accustomed to keeping a meticulous record of the work of its manifold magistracies.²⁹ Furthermore, parishes were close-knit communities in which individuals and families lived in intimate physical proximity.³⁰ It was therefore difficult to give birth unnoticed, and occasional attempts to conceal births were unsuccessful.³¹ 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.³² 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 was an increase in the frequency in which two periods of illness were stated: a long-term illness, and the recent illness from which the individual in question had died. These dual indications were extremely rare in 1645, but more common by 1796, and the shorter period was 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 October 10, 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 recognizes that ultimately this care was unsuccessful in preventing death.

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).³³ 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.³⁴ The vast majority of references to practitioners in Venice's death registers are to a *medico* (pl. *medici*), which referred to an individual who possessed a doctorate in medicine, surgery or both.³⁵ The percentage of adults (>25 years) who had been attended by a *medico* increased from 62% in 1645 to 95% in 1796 (see Table 1). 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.

<Insert Table 1 near here>

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. Labels were used interchangeably. Pellegrino Buora, for instance, is described variously as "Eccellente," "Eccellente Dottor," "Eccellente medico fisico," "medico," "medico Eccellente" and "medico fisico."³⁶ 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 1646.³⁷ 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.³⁸ 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 specialized expertise of the practitioner in question.³⁹ 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 1258.⁴⁰ 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.⁴¹ 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 of Physicians to elect seven of their number to hold membership of both groupings.⁴² 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.⁴³ Thus many physicians practiced surgery, but some surgeons were not allowed to practice physic. Nevertheless, surgeons were still esteemed, and the College of Surgeons was granted greater independence in 1763, and permitted to confer doctorates from 1780.⁴⁴ Collegiate surgeons were keen to differentiate themselves from barbers.⁴⁵ Barbers feature infrequently in the *Necrologi*, exclusively in the seventeenth-century records, and mostly had 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. Most physicians were Christian, but some were Jewish. Some were members of the College of Physicians, and others were not.⁴⁶ Jewish doctors, for instance, had been excluded from the College of Physicians since 1555.⁴⁷ 48% of *medici* named in the 1645 sample were members of the College of Physicians, although this figure must be considered approximate given limited evidence, and the proportions may have shifted over the course of the early modern period. Despite laws of 1316 and 1384 which stipulated that only members of the College of Physicians were permitted to practice medicine in Venice, other legislation – which was repeated and elaborated in the fifteenth and sixteenth centuries – instead prescribed that an individual could practice physic or surgery with a doctorate from the university of Padua or a license from the College of Physicians.⁴⁸ However, legislation repeatedly attempted to curb the activity of unqualified and unlicensed practitioners in the seventeenth and eighteenth centuries, which demonstrates that they were a known presence in the city.⁴⁹ Since Venice's College of Physicians was able to confer doctorates of medicine and philosophy, many doctors trained in the city.⁵⁰ The non-collegiate *medici* in the 1645 register, therefore, were a combination of physicians in training, surgeons, licensed non-members, unlicensed practitioners and Jews.

Mixed attitudes towards Jewish physicians found expression in a number of unsuccessful attempts to restrict their activity in the city. 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 1588.⁵¹ The following year, de Pomis appealed directly to Gregory's successor, Sixtus V, to grant him a license to attend Christians, emphasizing his qualifications in medicine and philosophy, previous licenses and care for the sick during the plague of 1575-7. Several months earlier, the papal nuncio, the pope's representative in the 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."⁵²

The position of the Republic had shifted by the mid seventeenth century, when a *Sanità* decree of March 10, 1642 prohibited Jewish doctors from treating Christian patients, which quickly provoked a response from those affected.⁵³ Three Jewish physicians petitioned the *Sanità*, each one of whom was described as a *medico fisico*, and all three cited licenses to practice 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.⁵⁴ 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.⁵⁵

Jewish practitioners treated Christians throughout the seventeenth century, and they were sometimes identified by the label *ebreo* (Jew) when they were named in the *Necrologi*.⁵⁶ In 1645, Valenzo worked in S. Geremia, and Chabili's clients in S. Geremia and S. Lucia included a boatman suffering from fever and spots. In 1676, Silva was active in the parishes of S. Geremia, S. Marcilian and S. Marcuola.⁵⁷ Both Mugia and Conegiano worked in S. Geremia in 1696, the latter treating a ten-year-old with fever. Jewish physicians therefore appear to have 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.

We can gauge the number of *medici* in Venice 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, 1696 and 1746. 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. Using the sample and population data, the number of *medici* per 1,000 population was 0.71 in 1645, 0.91 in 1696, and 0.78 in 1746 and 1796.⁵⁸

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.⁵⁹ The 1645 sample includes 38 names from the “active” list, and the decrepit Hetur Agapito. The College list suggests that four of the names (Benzon, Busti, Cerchiari, and Fuoli) probably referred to two or more individuals, 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. 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 centers in Italy.⁶⁰ In Rome, for instance, the number of physicians per 1,000 population was 1.17 in 1656.⁶¹ 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 1772.⁶² The increased density of doctors in Bologna, especially from the late seventeenth century onwards, may suggest a parallel increase in the level of medical engagement.

The death registers allow us to examine 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 – was given.⁶³ 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.⁶⁴ 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, and density of population (highest in central parishes, and in certain locations on the periphery namely S. Nicolò and the Ghetto).⁶⁵ Different parishes also had different proportions of male and female inhabitants; Monica Chojnacka has found that some neighborhoods contained “distinct pockets of widows.”⁶⁶ 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 analyzed by categorizing 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 2).⁶⁷ Many of the peripheral parishes had large populations and a less wealthy social profile.⁶⁸

<Insert Table 2 near here>

As the use of medical care increased, the area in which individual practitioners worked became more concentrated (see Table 3). In 1645, the majority of *medici* worked in multiple, non-contiguous parishes. The geographical 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.⁶⁹ 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, neighboring 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.⁷⁰ 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.

<Insert Table 3 near here>

The total number of parishes in which the average *medico* worked decreased steadily across the period. 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 3). In 1645, only 48% of *medici* operated in contiguous parishes, but this had increased to 70% by 1796. When the parishes of a *medico* 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.

Nurses scarcely appear in the *Necrologi*. The small number of allusions to a male nurse (*infirmier*) 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 major hospitals and charitable institutions.⁷¹ 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.

Midwives made a major contribution to high overall levels of medical engagement in 1796, having attended 26% of those who died in that year (see Table 1).⁷² The prominence of midwives in the *Necrologi* by this time was a dramatic change from 1645, when their work was barely mentioned in the registers. Aside from assisting women with childbirth, midwives were expected to notify parish priests of births, were permitted to perform emergency baptisms, and acted as expert witnesses in trials which required examination of female bodies.⁷³ Although these responsibilities show that the knowledge and expertise of midwives was valued by both the Church and the Venetian Republic, midwifery was increasingly regulated by a licensing process and by the formalization of training. In the early seventeenth century, midwives were supplied free of charge with a license to practice in the city after an examination by a physician and two qualified midwives had established their competence.⁷⁴ By 1689, the requirements for a midwifery license had expanded to include literacy and attendance at public anatomy demonstrations.⁷⁵ A school for midwives was established in 1770, run by a surgeon, and trainee midwives were expected to attend twice a week.⁷⁶

The increase in references to midwives in the *Necrologi* was stimulated in part by the tightened regulation of midwifery. The rise reflects the attempts of the *Sanità* to identify

women who were practicing midwifery without a license, which led, in 1695, to a requirement that parish priests notify the *Sanità* of births in their parish each month, including the names of midwives in attendance.⁷⁷ Priests were well-placed henceforth to provide information about midwives when reporting infant deaths to the *Sanità*. In addition, the proliferation of names at the end of the period was connected to demographic concerns about population decline and high levels of infant mortality, which intensified in the 1760s and 1770s and inspired the establishment of the obstetrical school as well as the production of printed lists of approved midwives.⁷⁸ These developments encouraged fuller reporting of the names of midwives in the *Necrologi*.

The growth in the presence of midwives in the registers was also due to an expansion in the scope of the medical care which they provided. In the seventeenth century, midwives focused on newborn infants, as is demonstrated by an Inquisition trial from 1638. One of the witnesses, a 46-year-old midwife named Pasquetta, who was married to an Arsenal caulkier, had recommended a female healer to the parents of a young boy suffering from a cough, rather than treating him herself.⁷⁹ Midwives increasingly provided care for infants for a longer period after birth. In the register for 1796, 58% of entries naming a midwife relate to infants aged 1 month or younger, compared with 87% of entries in 1656, a register in which references to midwives are more numerous than that for 1645.⁸⁰ The cause of death and age of older patients confirm that the scope of midwives' care had broadened. Midwives increasingly offered medical care in situations beyond the act of childbirth, often in cases of convulsions and smallpox. 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.

Changes in the geographical range of midwives cannot be determined due to the limited evidence of their practice in the seventeenth-century registers. Nevertheless, the 1796 register, in which 71 different midwives were named, shows that the distribution of midwife activity was shaped by both regulation and the nature of the medical care which they offered. 54% of midwives worked in a single parish, compared with 49% of *medici* in this year. Midwives had a close bond with their parish of residence, due to licensing requirements which obliged them to present a sworn statement from their parish priest attesting to their capacity to perform emergency baptisms.⁸¹ At the same time, the specialized care of infants and young children which midwives offered made them more likely than *medici* to work in a large number of parishes: 28% worked in 3-5 parishes, and 3% in more than 5 parishes; compared with 23% and 0% of *medici*.⁸²

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. By 1796, 93% of those aged 25 and over who died in the city (excluding deaths in hospitals) had seen a *medico*, compared with 63% in 1645 (see Table 1). The upsurge in the use of a *medico* was particularly notable in the

later seventeenth century; 85% of adult deaths noted a *medico* by 1696. The very high level of provision indicates that the cost of medical care was not a major 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 is conspicuous amongst the very elderly.⁸³

<Insert Figure 1 near here>

By contrast, medical care was only sought for infants in exceptional cases, throughout this period. Levels of infant mortality were consistently high in the sample, and did not vary considerably.⁸⁴ Medical care was rarely utilized for young children, and it was less intensely used for children aged 6-14 than for adults (see Figure 1). These findings fit well with the recent arguments of Hannah Newton about the treatment of sick children. Newton has rightly claimed that the evacutive and surgical remedies which were commonly used to treat illness in adults were viewed with caution when it came to infants and children, for whom gentle remedies were deemed more appropriate given their constitutions.⁸⁵ Prior to weaning, moreover, the mother might be treated, rather than the infant. The limited use of *medici* for infants and young children in Venice thus likely reflects contemporary beliefs that the physician had little to offer them, rather than a lack of interest in the welfare of the young. Nonetheless, as people became more inclined to seek medical care when sick, they also became more likely to do so for their young children. By 1796, 43% of the 13-60 month cohort (N = 133) had seen a practitioner, compared with 9% in 1645. Care was provided by both midwives (for 19% of the 1796 cohort) and *medici* (24%).

Social status also had an effect on whether an individual received medical care. Venetians were highly attuned to social status, which is reflected in the inclusion of titles in *Necrologi* entries. In theory, the Venetian social order comprised three groups: *nobili* (patricians), *cittadini* (citizens), and *popolani*.⁸⁶ In practice, the social profile of the city's population was more complex.⁸⁷ First, each of the three groups was very diverse, particularly in terms of wealth. Second, there were numerous exceptions to the formal separation of these groups.⁸⁸ Third, social mobility was possible, notably via the admittance of new families to the patriciate between 1646 and 1788. Fourth, some *cittadini* and merchants played significant roles in civic governance, such as in the Venetian chancery and the administration of charitable institutions. Fifth, titles accorded to some non-nobles and non-*cittadini*, including apothecaries, merchants and diamond dealers, show that certain individuals outside the legally-defined elite were perceived to be high status. Sixth, numerous immigrants and foreigners died in the city, and their backgrounds encompassed further diverse status gradations.

The *Necrologi* indicate social status via titles, rather than by categorizing individuals as noble, *cittadino*, *popolano* or foreigner. This study therefore uses titles to code the status of individuals. Individuals have been classed as "high status" if they have a title which signifies nobility or esteem, or if a high status husband or father is named, to avoid skewing the analysis of status towards adult males.⁸⁹ The secular clergy, regular clergy and female religious have been coded as "religious." Although status gradations were also important in the Catholic Church and within religious institutions, an individual's precise religious status

was not always included in the *Necrologi*.⁹⁰ All other individuals have been coded as “lower status.” This group contains a considerable range of people, from artisans and Arsenal workers to servants and hawkers. Any categorization of social status is necessarily artificial, not least because an individual’s status often fluctuated over the life course; but classification as “high,” “lower” and “religious” permits an assessment of the broad impact of status on medical engagement.

<Insert Table 4 near here>

High status individuals were more likely than those of lower status to have seen a *medico* before their death in all the years assessed in this study (see Table 4). The clergy and nuns were also highly likely to have seen a *medico* throughout the period. The picture is clearest if we focus on adults. Almost all high status adults had seen a *medico* by the end of the seventeenth century, and the proportion reached 98% in 1796. Lower status adults have been divided into those who died inside and outside hospitals (no high status adult died in a hospital). All lower status adults who died in hospital in the eighteenth century had seen a *medico*. As we shall see, the low recorded use of a *medico* in some seventeenth-century institutions may result from recording practices which assumed care in these settings. Outside hospitals, there is a sharp increase in lower status adults who had seen a *medico* in 1696, and a more gradual increase over the course of the eighteenth century. The differential between high and lower status adult deaths outside hospitals decreases from 22% in 1645 to 6% in 1796. These figures show that the increased recourse to medical care amongst the lower stratum of society was not simply driven by hospital provision.

The widespread use of *medici* by those of lower status merits emphasis and explanation. 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. There is also 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 owed for the treatment of Calalin’s father for gangrene of the testicles, over a period of sixty five days.⁹¹ 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 was rigorously applied, then Calzarello would deserve a far greater sum. Variable fees made medical care more accessible to lower status individuals. In addition, charitable bequests enhanced access to medical care in local settings. The generous bequest of Antonio Gatto, parish priest of S. 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 neighboring parishes for many years after his death.⁹² Gatto also made provision for the costs of medicines ordered by the doctor.

Confraternities also facilitated access to medical care, although the surviving evidence is fragmentary. The Scuola Grande di S. Marco, one of the city’s major confraternities, paid a salary to a doctor to provide care to the poor and sick from at least 1590 to 1614.⁹³ Yet the Scuola Grande di S. Giovanni Evangelista suspended the salaries of its two contracted

physicians in 1648 because “this expenditure is superfluous, because the brothers are assisted by their guilds.”⁹⁴ 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.⁹⁵ 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 payments for medical care, even if they no longer retained and supplied a specific practitioner.

The *Fraterne dei Poveri*, or “Confraternities of the Poor,” also raised levels of medical engagement. *Fraterne*, the first of which was founded in 1563, were parish-based organizations which offered support to the needy.⁹⁶ In 1608, the *Fraterna dei Poveri* in the parish of S. Marcuola paid annual salaries to a physician and a surgeon who were required to treat the sick and poor of the parish for free. Only a handful of parishes had *Fraterne* during the seventeenth century, and their activity was limited. However, the situation changed in the early decades of the eighteenth century, when *Fraterne* were established in all parishes and developed into a comprehensive system of home relief. The records of these institutions reveal the diversity of those considered to be poor and in need of assistance, from families with many young children to elderly single women. The *Fraterne* were supervised by the *Sanità* but funded by charitable gifts and bequests. Between 1778 and 1785, all but five *Fraterne* employed at least one physician or surgeon, usually recent graduates, and 7% of the income of the *Fraterne* was spent on their salaries.⁹⁷ The *Fraterne* thereby likely contributed significantly to the narrowing of the gap in medical engagement between those of high and lower social status.

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 1790.⁹⁸ By contrast, a greater number of men than women are recorded as dying in the *Necrologi*. 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.⁹⁹ 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.¹⁰⁰

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.¹⁰¹ In each case, however, the absolute number of deaths is too small to permit meaningful analysis.¹⁰² From August 1631, the *Sanità* maintained separate registers of non-Christian deaths, which contained deaths of Jews at the front of the volume, and deaths of

Turks (mostly Muslim traders from the Ottoman Empire) at the rear.¹⁰³ 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 March 29, 1516. Almost immediately thereafter, on April 14, 1516, the community was first informed of the reporting requirement.¹⁰⁴ In an Inquisition trial from 1661, a Jewish witness named 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 register of the *Sanità*. 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. Corcos named four Jewish physicians: Cabib, Valenzo, Silva and Olivier. When asked if there were also surgeons in the Ghetto, he replied that the aforementioned Valenzo practiced surgery and that one of Valenzo's relations had let blood from Corcos himself.¹⁰⁵ The Jewish community of around 2,700 was therefore well furnished with medical practitioners, who also worked beyond the Ghetto. The non-Christian *Necrologi*, in which Jewish practitioners are named in the entries for 1696 and 1746, show that Jews were more likely than Christians to seek care from a *medico*.¹⁰⁶ A *medico* is recorded against 74% of Jewish deaths in 1696 and 76% of deaths in 1746, in contrast to 50% and 49% of Christians in the sample. Overall, a practitioner is recorded in 77% of Jewish deaths in 1696 and 96% of deaths in 1746, demonstrating an increasing level of midwife activity and the habitual use of medical care by the Jewish community by the mid eighteenth century.

4. Institutional care

The existence in Venice of institutions which provided 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 one 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*.¹⁰⁷ 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 1714-1718.¹⁰⁸ 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. The presence of hospitals in the registers demonstrates their importance to the Republic. 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.¹⁰⁹ Both the *Ospedali Grandi* and the soldiers' hospitals had large and fluid populations, and recording practices ensured that an outbreak of epidemic disease would come to the attention of the *Sanità* swiftly. The share of deaths that occurred in institutions fluctuates from 6% in 1645, to 10% in 1696, to 4% in 1746, and to 16% in 1796. The higher proportions were driven by significant numbers of

dead soldiers, and highlight the importance of the provision of medical care to the military within the city itself.

All the hospitals which appear in the *Necrologi* had organized medical provision. 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.¹¹⁰ 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.¹¹¹ 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.¹¹² 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 a financial crisis led to a 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.

<Insert Table 5 near here>

The level of recorded medical care was high at the Mendicanti and Pietà in the seventeenth century, and almost everyone who died in a hospital in the eighteenth century had been seen by a *medico* (Table 5). However, reported rates of *medico* presence were zero or very low at the Incurabili and Ospedaletto during the seventeenth century, even though the Incurabili aimed to treat sufferers of venereal disease and the Ospedaletto was designated by statute as the hospital for those suffering from acute conditions, such as fevers and wounds.¹¹³ Both institutions employed a physician, and the Ospedaletto also had a salaried surgeon.¹¹⁴ Given the staffing and intended medical function of both institutions, it seems likely that the level of medical care in these institutions is under-reported in the seventeenth-century registers.

In theory, each hospital catered to a specific group, but the clientele of each hospital was more diverse in practice. 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.¹¹⁵ The nature of medical provision at the hospitals also changed over time. From 1768, smallpox inoculation was practiced at the Mendicanti, and the *Sanità* encouraged fathers to present themselves at the hospital with their small children.¹¹⁶ During the eighteenth century, S. Servolo began to care for the mentally ill, although almost all deaths on the island in 1796 were specified to be of soldiers.

Hospitals had a range of functions, including the provision of free medical care to those of lower social status. Pragmatism jostled alongside Christian duty. Many patients at the Ospedaletto and Mendicanti (where records best survive) were not of Venetian birth, despite repeated legislation which ordered the foreign poor to leave the city.¹¹⁷ The Mendicanti's records indicate that when foreigners were admitted to the institution, it was often for scabies treatment.¹¹⁸ This approach was designed to limit the spread of this highly contagious condition to Venetians. All the same, the perceived quality of care in the *Ospedali Grandi* was such that a smattering of patients (or their families) paid to be

admitted and for their continuing care, including members of the nobility on rare occasions.¹¹⁹

5. Medical care and illness

Cause of death data in the *Necrologi* offers indications of the kinds of illnesses and health problems for which people sought medical care.¹²⁰ 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. All causes have been analyzed, 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 increasing variety of stated causes, there were limited changes in the specified causes of death during this period, and 75% of all deaths in the sample were attributed to just fifteen causes (see Table 6). 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.¹²¹ 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 fetus in months in these cases. All the same, the number of “deaths at birth” may be slightly inflated by the religious imperative to baptize 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 physicians and the *Sanità*.¹²² “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. Many other deaths were attributed to respiratory conditions, including 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 6 shows that there was a strong correlation between *medico* attendance and some causes of death, and a weak correlation in other cases. In 1645, a *medico* was usually consulted in cases of malignant fever, dropsy, pleurisy and tuberculosis. The data also indicates a hierarchy of fevers, whereby malignant fever was more likely to have been treated by a *medico* than continuous fever or 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.¹²³ 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 conditions of infancy and childhood, including *spasemo*, measles and worms. A *medico* was rarely consulted in cases of smallpox, although there is a small increase over the course of this period, and medical publications about this disease focused on inoculation rather than treatment.¹²⁴ 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. Most *Necrologi* entries record the duration of illness in days or months, although hours or years are sometimes given. In around one third of entries the length of illness 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.¹²⁵

Conclusion

Death registers expose high and increasing levels of medical consumption in early modern Venice, particularly by adults, high status individuals, and those in hospitals, religious institutions and the Ghetto. The upsurge in medical engagement was especially pronounced in the second half of the seventeenth century, which corresponds with Mortimer’s findings for England. 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 London, rural England and the small towns and villages of the Netherlands, and is comparable with that in other major Italian urban centers.¹²⁶ Thus despite the shifting balance of political and commercial power in early modern Europe, Italy’s longstanding medical traditions and dense urban networks energized the market for medical care. Most of this care was provided by a *medico*, a trained practitioner with expertise in physic or surgery. By the end of the period, midwives had also become important suppliers of medical care, and had attended more than one quarter of the deceased.

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.¹²⁷ As scholars of “medical pluralism” have shown, the sick often engaged in a number of simultaneous strategies. The use of remedies bought from charlatans was not incompatible with visits from a *medico*.¹²⁸ High levels of medical consumption also did not signal the displacement of religion from the strategies of the sick, as Mortimer has argued was the case in seventeenth-century England.¹²⁹ 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. 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 he or she 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.

Religious beliefs also motivated the charitable gifts and bequests which underpinned hospital finances and funded care at the level of the parish. Charitable provision enhanced the accessibility of medical care to those of lower social status, and may have contributed to increasing rates of medical engagement in eighteenth-century Venice, which contrast with the plateau in the level of use of practitioners in London from the 1680s onwards.¹³⁰ Institutional care and home relief were both influenced by the Republic’s evolving approach to poverty in the city, even though neither type of assistance was administered by the government directly until the very end of this period. Hospitals had a fundamental place in the Republic’s seventeenth-century attempts to remove beggars – thought to spread disease – from the streets by expulsion or confinement. As the role of *Fraterne* expanded during the eighteenth century, the population of some hospitals, notably the Mendicanti, declined. Hospitals continued to play an important role, nonetheless, in providing care to sick soldiers and in public health strategies such as smallpox inoculation. Faced with high levels of mortality, documented in the monthly and yearly tallies of deaths in the *Necrologi*, the Republic intensified its activity in the sphere of healthcare from the late 1760s onwards, increasing its efforts to regulate and educate practitioners. The inhabitants of the city, as we have seen, were eager to use them.

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22. Beltrami, *Storia della popolazione*, 22.
23. ASV, *Sanità*, B. 760, May 4, 1768: "individuando il nome del Medico, che li avesse assistiti."
24. See for example, ASV, *Sanità*, B. 873, May 6, June 5, July, 6, 7, and 10, October 9, November 3, 1645; ASV, *Sanità*, B. 900, April 3, July 1, December 2, February 4, 1696; ASV, B. 934, April 2, December 1, 1746; ASV, B. 983, July 6, August 3, October 1, November 2 and 3, December 2, 1796.
25. See ASV, *Sanità*, B. 983.
26. Beltrami, *Storia della popolazione*, 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. ASV, *Sanità*, B. 873, 900, 934, 983.
28. Roger Finlay, *Population and Metropolis: The Demography of London 1580-1650* (Cambridge, 1981), 30; John Landers, *Death and the Metropolis: Studies in the Demographic History of London, 1670-1830* (Cambridge, 1993), 100, 136. Cameron Campbell and James Z. Lee, *Life under Pressure: Mortality and Living Standards in Europe and Asia, 1700-1900* (Cambridge, MA, 2009), 366. Thanks to Patrick Wallis for drawing this to my attention.

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29. Filippo de Vivo, "Ordering the Archive in Early Modern Venice (1400-1650)," *Archival Science* 10 (2010): 231-248.
30. Alexander Cowan, "Gossip and Street Culture in Early Modern Venice," *Journal of Early Modern History* 12 (2008): 313-333.
31. Joanne Ferraro, *Nefarious Crimes, Contested Justice: Illicit Sex and Infanticide in the Republic of Venice, 1557-1789* (Baltimore, 2008), ch. 4.
32. On death registers as historical sources, see 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).
33. In the seventeenth century, 4-5% of entries name multiple practitioners, usually two *medici*, but this becomes exceptional in the eighteenth century. The increased use of a single practitioner mirrors Pirohakul and Wallis's findings for eighteenth-century England.
34. For details of all labels used for these categories, see Alexandra Bamji, "Medical care in early modern Venice," LSE Economic History Working Papers 188 (2014), 23.
35. Practitioners were categorised as *medico* if they were described as dottor, Eccellente, medico, medico chirurgo, medico fisico, medico militare or with combinations of these labels. On learned practitioners in Venice, see Giuseppe Trebbi, "Le professioni liberali," in Alberto Tenenti and Ugo Tucci (eds), *Storia di Venezia: dalle origini alla caduta della Serenissima. IV. Il Rinascimento. Politica e cultura* (Rome, 1996), 465-527.
36. ASV, *Sanità*, B. 983.
37. Biblioteca Museo Correr (BMC), Codice Cicogna 2533.
38. 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, 2010), 14, n. 26.
39. In this study, practitioners labelled "medico chirurgo" are included in the number of *medici*, but those labelled "chirurgo" are not.
40. Carlo M. Cipolla, *Public Health and the Medical Profession in the Renaissance* (Cambridge, 1976), 6.
41. Richard J. Palmer, "Physicians and Surgeons in Sixteenth-Century Venice," *Medical History* 23 (1979), 451. For a similar picture in southern Italy, see Gentilcore, *Healers and Healing*, 74.
42. Biblioteca Nazionale Marciana (BNM), Italiani VII 2342 (=9695), *Notitie cavate alli libri di Priori*, 1635.
43. See ASV, *Sanità*, B. 747, March 4, 1712.
44. 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, 1985), 53.
45. 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, 1998), 151.
46. On the earlier history of the College of Physicians, see Richard Palmer, *The Studio of Venice and its Graduates in the Sixteenth Century* (Padua, 1983), 3-14.
47. Benjamin Ravid, "In defense of the Jewish doctors of Venice, ca. 1670," in Mauro Perani (ed.), *Una Manna Buona per Mantova* (Florence, 2004), 488.
48. Palmer, *The Studio of Venice*, 3-4; ASV, *Sanità*, B. 155, January 26, 1723.
49. ASV, *Sanità*, B. 562, December 9, 1608 and September 26, 1689; ASV, *Sanità*, B. 155, January 26, 1723.
50. Paul F. Grendler, *The Universities of the Italian Renaissance* (Baltimore, 2002), 140-141.
51. David de Pomis, *De Medico Hebraeo Enarratio Apologica* (Venice, 1588).
52. David Chambers and Brian Pullan (eds), *Venice: A Documentary History, 1450-1630* (Oxford, 1992), 340.
53. ASV, *Sanità*, B. 739, April 11, 1642a; April 11, 1642b; April 12, 1642.
54. By comparison, in seventeenth-century London, irregular practitioners used their work during plague epidemics as justification to continue to practice thereafter. See Patrick Wallis, "Plagues, Morality and the Place of Medicine in Early Modern England," *English Historical Review* 121 (2006), 13-14.
55. ASV, *Sanità*, B. 85, October 5, 1688, November 26, 1688.
56. As noted earlier, the *Necrologi* exclude deaths in the Ghetto.
57. ASV, *Sanità*, B. 887.
58. The calculation of number of *medici* per 1,000 population uses population data from 1642, 1696, 1760 and 1790 from Beltrami, *Storia della popolazione*, 38.
59. BMC, *Codice Cicogna* 2533.
60. Matthew Ramsey, *Professional and Popular Medicine in France, 1770-1830: The Social World of Medical Practice* (Cambridge, 1998), 59.

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61. Gentilcore, *Healers and Healing*, 68.
62. Pomata, *Contracting a Cure*, 58.
63. Deaths attributed to the parish of S. Marco also included those who had died in prison.
64. See, for example, ASV, *Sanità*, B. 900, July 6, 1696; February 4, 1696. These individuals do not complicate the analysis as often medical care which they had received in the city of Venice itself is recorded.
65. Beltrami, *Storia della popolazione*, 41-43.
66. Beltrami, *Storia della popolazione*, 48; Monica Chojnacka, *Working Women of Early Modern Venice* (Baltimore, 2001), 80.
67. Parishes have been categorized as central, intermediate or peripheral with reference to their proximity to the commercial and political heart of the city which centered on the axis between the Rialto market and Piazza S. Marco. For full details, see Bamji, "Medical care," 24.
68. For evidence of a higher proportion of *popolani* on the periphery, see Beltrami, *Storia della popolazione*, 47.
69. ASV, *Santo Uffizio*, B. 89, Giovanni Battista Bonaventura, testimony of Giacomo Griffoni, October 19, 1632.
70. ASV, *Santo Uffizio*, B. 95, Girolama Baglioni, testimony of Michel Angelo Rota, February 1, 1639.
71. On nursing care at the Derelitti and Mendicanti, see Palmer, "L'assistenza medica," 38, 41. For the Zitelle, see Monica Chojnacka, "Women, Charity and Community in Early Modern Venice: The Casa delle Zitelle," *Renaissance Quarterly* 51 (1998), 77.
72. Midwives are described interchangeably as *comare* or *allevatrice*.
73. Daniela Hacke, *Women, Sex and Marriage in Early Modern Venice* (Aldershot, 2004), 155-159; Pastore, 161-163.
74. ASV, *Sanità*, B. 739, February 25, 1624.
75. ASV, *Sanità*, B. 85, September 27, 1689.
76. Nelli-Elena Vanzan Marchini, *I mali e i rimedi della Serenissima* (Vicenza, 1995), 146.
77. ASV, *Sanità*, B. 86, September 12, 1695.
78. Nadia Maria Filippini, "Levatrici e ostetricanti a Venezia tra Sette e Ottocento," *Quaderni storici* 58 (1985), 153; 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, 1993), 162-3. The earliest surviving catalogue of Venetian midwives dates from 1781. ASV, *Sanità*, B. 158, July 23, 1781.
79. ASV, *Santo Uffizio*, B. 95, Girolama Bordoni, testimony of Pasquetta Comare, November 23, 1638.
80. 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).
81. ASV, *Sanità*, B. 158, July 23, 1781.
82. Similarly, Doreen Evenden found that midwives in London worked beyond their parish of residence. Doreen Evenden, *The Midwives of Seventeenth-Century London* (Cambridge, 2000), 91.
83. The figure reports the percentage of deceased using a *medico*, calculated for decadal averages from ages 5 to 84. Infants and young children are grouped by ages 0 to 12 months and 13 to 60 months. All deceased with reported ages over 84 are grouped together. For full details of recourse to medical care by age, see Bamji, "Medical care," 25-26.
84. 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 aggregated, 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, *Storia della popolazione*, 160-163, 168-173.
85. Hannah Newton, *The Sick Child in Early Modern England, 1580-1720* (Oxford, 2012), 70-71.
86. 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%. See Beltrami, *Storia della popolazione*, 72.
87. Isabella Cecchini, "Un pantheon borghese. Benefattori ai Mendicanti nel Seicento," in Alexandra Bamji, Linda Borean and Laura Moretti (eds), *La chiesa e l'ospedale di San Lazzaro dei Mendicanti* (Venice, 2015), 65, 77, 83-84.
88. Brian Pullan, *Rich and Poor in Renaissance Venice: The Social Institutions of a Catholic State, to 1620* (Oxford, 1971), 107.
89. High status titles comprise: NH (nobiluomo), ND (nobildonna), Clarissimo signor, Illustrissimo Signor, Signor, Eccellente Domino.
90. 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* (London, 2002), 48-49.

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91. BNM, Italiani VII 2339 (=9671), July 2, 1677. Only a handful of documents survive which record arbitration of this kind.
92. 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* (London, 2013), 224. I am very grateful to Emma Jones for sharing further details of the bequest with me.
93. Pullan, *Rich and Poor*, 189.
94. Pullan, *Rich and Poor*, 98.
95. 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, 2001).
96. Andrea Vianello, "The *Confraternite dei Poveri*: Confraternal Home Relief and Institutionalization of the Poor in Sixteenth- and Seventeenth-Century Venice," in Christopher Black and Pamela Gravestock (eds), *Early Modern Confraternities in Europe and the Americas* (Aldershot, 2006), 98.
97. Andrea Vianello, "Assistenza a domicilio a Venezia nel XVIII secolo: L'uso del denaro da parte delle fraterne dei poveri," in Alessandro Pastore and Marina Garbellotti (eds), *L'uso del denaro: Patrimoni e amministrazione nei luoghi pii e negli enti ecclesiastici in Italia (secoli XV-XVIII)* (Bologna, 2001), 234-237.
98. Beltrami, *Storia della popolazione*, 80.
99. For detailed figures, see Bamji, "Medical care," 26.
100. Wendy Churchill, *Female Patients in Early Modern Britain: Gender, Diagnosis and Treatment* (Farnham, 2012).
101. Beltrami, *Storia della popolazione*, 22.
102. Beltrami, *Storia della popolazione*, 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, 2001).
103. ASV, *Sanità*, B. 996, 997 and 998. This development was likely inspired by an interest in Jewish mortality during the plague of 1630-1.
104. Beltrami, *Storia della popolazione*, 18.
105. ASV, *Santo Ufficio*, B. 107, Menachem Coen et al., July 6, 1661.
106. All deaths from each year have been analysed. Records from 1796 do not survive, and entries from 1645 do not indicate practitioner presence.
107. The records of these hospitals have been dispersed, and survival is patchy.
108. In 1796, the presence of soldiers in the city was due to the Republic's strategy of armed neutrality in the context of fighting between the French and the Habsburgs on the mainland. See David Laven, *Venice and Venetia under the Habsburgs* (Oxford, 2002), 35.
109. For Venice's hospices, see Franca Semi, *Gli "Ospizi" di Venezia* (Venice, 1983). On the Penitenti, see McGough, 128-133.
110. ASV, *Sanità*, B. 740, February 5, 1648.
111. ASV, *Sanità*, B. 18, March 3, 1694.
112. See, for instance, Istituzioni di Ricovero e di Educazione Venezia (IRE), *Mendicanti* B2, March 28, 1650 and April 4, 1650; Vanzan Marchini (ed.), *La memoria della salute*, 157.
113. Giuseppe Ellero, "Personaggi e momenti di vita," in Bernard Aikema and Dulcia Meijers (eds), *Nel Regno dei Poveri: Arte e storia dei grandi ospedali veneziani in età moderna 1474-1797* (Venice, 1989), 118.
114. Jon Arrizabalaga et al., *The Great Pox: The French Disease in Renaissance Europe* (New Haven, 1997), 165.
115. ASV, *Ospedali e luoghi pii diversi*, B. 609, fasc. 2, May 16, 1675.
116. Vanzan Marchini (ed.), *La memoria della salute*, 43-45.
117. See, for example, ASV, *Sanità*, B. 741, May 27, 1654.
118. Alexandra Bamji, "I protagonisti dei Mendicanti tra cura e carità," in Alexandra Bamji, Linda Borean and Laura Moretti (eds), *La chiesa e l'ospedale di San Lazzaro dei Mendicanti* (Venice, 2015), 57.
119. For examples, see Bamji, "I protagonisti dei Mendicanti tra cura e carità," 51.
120. 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. It was not 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; "etica," "etisia" and "tisi" have all been coded as tuberculosis.

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121. 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.
122. See Vanzan Marchini, *I mali e i rimedi della Serenissima*, 264-274.
123. Only a small number of women in the sample died in childbirth. 4 out of 5 had seen a *medico* in 1645; 7 out of 10 in 1696; 3 out of 4 in 1746; and 5 out of 5 in 1796.
124. One of the earliest European publications on inoculation was by Jacopo Pilarino, who studied in Venice. On inoculation debates in eighteenth-century Italy, see Bianca Fadda, *L'innesto del vaiolo: Un dibattito scientifico e culturale nell'Italia del Settecento* (Milan, 1983).
125. For detailed figures, see Bamji, "Medical care," 28-29.
126. Mortimer, 12, 45; Pirohakul and Wallis; Deneweth and Wallis.
127. David Gentilcore, *Medical Charlatanism in Early Modern Italy* (Oxford, 2006), 274.
128. See Cecilia Ferrazzi, *Autobiography of an Aspiring Saint*, ed. and trans. Anne Jacobson Schutte (Chicago, 1996), 51, 57.
129. Mortimer, 208. 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, 2008): 209-230.
130. Pirohakul and Wallis.