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Medical revolutions? the growth of medicine in England, 1660-1800

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Abstract:

This paper studies the rising use of commercial medical assistance in early modern England. We measure individual consumption of medical and nursing services using a new dataset of debts at death between c.1670-c.1790. Levels of consumption of medical services were high and stable in London from the 1680s. However, we find rapid growth in the provinces, in both the likelihood of using medical assistance, and the sums spent on it. The structure of medical services also shifted, with an increase in “general practice”, particularly by apothecaries. The expansion in medical services diffused from London, and was motivated by changing preferences, not wealth.

When did the English come to rely on commercial or professional medical practitioners to help them respond to illness? What led the sick and their families to purchase external expertise? How did medical practitioners respond to changes in demand? These are basic issues for our understanding of social responses to sickness, the organization of medical occupations, and the development of services more generally. Speaking broadly, we can think of two phases of thinking on them. The first, apparent in early studies of medical history, generally linked the sick's use of doctors to scientific advances. These scholars expected little medical provision before the nineteenth century, when medicine began to "work"; and to the extent that they considered medical practice aside from medical ideas they observed little.¹ The second, articulated paradigmatically by Margaret Pelling and Charles Webster and extended in detail by Pelling and other scholars, emphasized the scale and varied nature of medical assistance available at an early date in preindustrial England.² They uncovered a medical world in the Tudor and Stuart period that was dense and diverse. However, they largely left open the question of how the mix of medical provision they observed changed over the next two centuries, and the extent to which the scale and nature of sixteenth-century medical consumption matched that found in later periods.

Much of the research that has followed revealed rich tapestries of medical provision across early modern Europe. However, these studies have largely left aside comparisons of the relative abundance of provision in different places, or the extent to which it changed over time in a single region or country.³ This is not to say that historians of medicine neglected change entirely. Questions of continuity and change remained central to studies of medical thought, and many did argue that the importance of professional or commercial medicine grew during the period they observed, whether this was in the seventeenth, eighteenth or nineteenth centuries. In this, the growth of the market economy was often assigned a key role, assumed to be affecting medicine as it did other areas.⁴ But it is rare to find the degrees of change compared over these centuries in a way that allows an appreciation of the timing or interaction of the growth of medical care, or for causation to be clearly specified. In most studies that do attempt to pin down transitions, as for example in Irvine Loudon's work on general practitioners, much of the explanation of change is put in the hands of practitioners who are invading others' fields, or who are over or under-stocked relative to demand at a particular point in time.⁵ The only really comparable figures in this literature are ratios of numbers of practitioners to population.⁶ The insight that they offer – and this is usually that a

high density of practitioners existed – tells us a great deal about supply, but less about demand and how it was met. In isolation, patient to practitioner ratios also raise profound questions of method and interpretation: density of practitioners can be interpreted as indicating fragmentation, low productivity and underemployment as easily as indicating specialization, high demand, and opportunity.

While these studies have given us deep insights into medical practice, they provide only limited answers to the basic questions of what changed in the level, composition and causation of people's use of medical care over time. In this, they parallel work on consumption more generally, which has also struggled to specify the scale and causal framework behind repeated observations of growing consumption in different periods.⁷ Framed at their most general—were the sick as likely to use medical strategies in the sixteenth century as they were in the nineteenth, or did they choose other responses, perhaps stoicism or prayer?—these questions probably become unanswerable in practice. The instability of sickness as a category would likely sink such an enterprise, even before we raise the question of whether medicine's goal shifts from preserving health to treating sickness.

However, we can perhaps gain more traction on a more narrowly specified version of this question: were people more or less likely to engage with paid-for medical care in the sixteenth century than the nineteenth century? The limitations of this question are obvious: it tells us nothing about medical and nursing care provided by the self, family, friends, neighbors and community; it relies solely on the people's own definition of medical need; and, of course, it tells us nothing about the cultural meanings of care or the influences that shaped the decision to resort to commercial medicine, except by inference. Yet narrowing our focus from medicine as a concept or somatic approach to its expression in the practice of individuals who are using medicine as an occupation or profession also has benefits. By focusing on care that was obtained, we are dealing with individuals' revealed preferences, which are perhaps easier to compare across time than the meanings of consumption. We are isolating the set of engagements with medical practitioners that sustained medicine as an occupation, that would justify its professional regulation, and that sustained its academic and institutional development. And we are concerning ourselves with the sick's utilization of a mode of provision that – through the cash nexus – can be observed and defined relatively precisely.

Recent work has made some significant moves towards identifying changes in the usage of medical care in England. In particular, Ian Mortimer's exploration of probate accounts in provincial Southern England, especially East Kent, leads him to identify a "medical revolution" in the seventeenth century.⁸ Mortimer links changes in the rates of resort to medical care to wider shifts in attitudes to death and religion. Wallis's study of the importation of medical drugs into England gives a similar indication of rapid growth in consumption of medicine in the seventeenth century, and suggests that access to therapeutic resources may have been fundamental.⁹ It also suggests that changes in consumption were a longer-term process: drug imports saw continued growth over the eighteenth century. Bamji's work on Venice and Deneweth and Wallis's study of the Netherlands in this issue show that these changes were part of a wider European phenomenon.¹⁰

This paper moves beyond these studies by exploring shifts in people's use of medical and nursing care during the century after Mortimer's "medical revolution", using a substantial new sample of probate accounts from the long eighteenth century. We provide new estimates for levels of resort to medical practitioners and nurses in London and provincial southern England and analyze changes in the structures and intensity of medical provision through a discussion of practitioners' identities and interactions. Our findings suggest a more extended medical "revolution" than Mortimer posited, apparent in both the rising probability that the deceased had used medical care and the amount they expended on it. We also show that changes in demand were accompanied by striking shifts in the organization of medical supply. To set this into a more general context, we shed substantial new light onto the growth of "professional" services in a period in which the services sector of the economy is increasingly identified as rapidly expanding, but for which sources remain remarkably limited.¹¹

Sources

The main sources that we use in this paper are probate accounts, prepared by executors or administrators (in cases of intestacy) as the final stage in the process of administration. Probate accounts record the initial value of the deceased's personal estate ("the charge"), and then various repayments of the deceased's debts, which often include funeral costs and medical expenses.¹² Accounts were generally created when problems arose during probate, such as conflicts over the estate, intestacy, or high levels of debt. After 1685 accounts could only be demanded "in behalf of a minor... a Creditor or next of Kin"; this led to a dramatic

reduction in the number that survive. In the eighteenth century only around 40 accounts per year survive from courts other than the Prerogative Court of Canterbury.¹³

The accounting process was set down in the late sixteenth century by Henry Swinburne and changed little thereafter.¹⁴ Debts were to be paid in a specific order, starting with debts to the crown. Debts without specialty (that were not in writing) were repaid last. Usually, accounts were entered within a year or two of death. Where orphans survived, the account might not be filed until the child was of age. Roughly three-quarters of the accounts analyzed here were drawn up within two years of death, and less than 10% were filed more than ten years after death.¹⁵

Accounts were not generated randomly. That said, it is unlikely that the issues that led to their creation affected the deceased's propensity to seek medical services. Indeed, if intestacy reflects sudden death, then we may expect these accounts to under-record medical care. They certainly reflect very different manners of death, from protracted illness – one mentions a sickness which “continued thirty-two weekes” – to suicide.¹⁶ Nonetheless, accounts are clearly biased as a sample of the English population. The majority are for male deceased.¹⁷ Few survive from the poor.¹⁸

A significant concern for us is the extent to which payments for medical and nursing services were recorded. Accounts record services for which payment had not been made at the time of death. If doctors were paid at each visit, or medicines were purchased with cash, then they will be omitted. Some accounts do mention partial repayments.¹⁹ So, the apothecary Mr. Wood received £6 “in part of his bill”,²⁰ and the apothecary Mr. Varenne received £8 as “the balance of his bill”.²¹ We also find one case of a messenger paid for “going to the doctor” where no debt to the doctor is recorded.²² Indeed, the only description of deathbed care for a testator that we have found outside an account was not matched by debts in their account.²³ Payments could also have been reduced or negated by death if a conditional contract in which fees depended on a cure had been used, or if practitioners eschewed fees in favor of “gifts”.²⁴ Medical services funded by third parties – institutions, poor law provision, box clubs and societies – would also be invisible.

In practice, the impact of these problems is likely to be limited. Trade credit was ubiquitous in Britain during this period.²⁵ We would certainly expect retrospective billing where care was ongoing, as in nursing or medical attendance.²⁶ Institutional provision was largely for the poor, who are unlikely to appear in our sample. The use of conditional contracts for medical

services may have changed, although Pelling suggests any shift probably occurred in the first half of the seventeenth century.²⁷ While we cannot exclude the possibility that these factors affect our results, it still seems reasonable to see the accounts as offering a fair proxy for trends in medical consumption over time.

Even where medical debts are recorded, we face challenges in interpreting them. First, we are not always sure that debts relate to the final illness. That care was provided at death is specified in about a quarter of medical debts and half of nursing debts.²⁸ Others are less precise: a debt “due... at the time of his death” may be for a different illness, for example.²⁹ Many entries just report the creditor’s occupation,³⁰ or state that it was his “bill” or “fee”. We cannot be certain that these debts relate to medical services, given that practitioners may have used multiple trades.³¹ For want of a way to distinguish these alternatives, we assume all debts to medical practitioners and nurses probably related to the final illness. Second, accounts are often vague, referring to necessaries or watching which may not relate to the deceased, and may have occurred after death. Debts are often bundled together, making it difficult to evaluate the price of services or goods. Occupations are not always given for creditors, so we may miss some medical debts. While frustrating, there is no evidence or reason to suggest that the impact of these problems is changing over time in a way that would undercut the potential to take debts in accounts as a proxy for developments in medical consumption.

All the accounts we examine here were presented to the Prerogative Court of Canterbury (PCC). This was the senior court in the province of Canterbury, which covered most of southern and western England (the northern part of England was in the province of York). It dealt with probates when “noteworthy” goods – generally taken as goods over £5, or £10 in London - were left in more than one diocese.³² We took a large random sample of 1,416 accounts by searching within surviving files in the three main record series.³³ Of these, the 1,209 legible and complete accounts that fall into one of three sub-periods, the 1670s (1670-90), the 1720s (1720-1740) and the 1780s (1775-1800), are used to achieve a sense of chronology over the long eighteenth century.³⁴

Accounts surviving in the PCC differ from accounts in other diocesan archives in that they are longer, they sometimes omit the charge or final balance, and they are more often incomplete. A significant minority lack any details of the personal or household expenses of the deceased. Mortimer suggests such accounts often appear when the executor was unwilling

to act.³⁵ In order to correct for this, we distinguish a sub-sample of “detailed” accounts which contain funeral expenses. As all estates faced funeral expenses, we take their presence as indicating that the executor had a detailed knowledge of – and desire to record – household debts.

The deceased people we find in these accounts were largely wealthy men from London and its periphery, plus a smaller number from the provincial elite.³⁶ More than half lived in and around London, either in the city itself, Middlesex or metropolitan Surrey. The remainder were widely spread, with 10% from the South West, 7% from East England, and 3% from the West Midlands, although we would expect these individuals to have some contact with London society. More than one in ten of the deceased was described explicitly as a gentleman or aristocrat.³⁷ Occupations were given for only 277 of the deceased, but show clusters of clergy (25), yeomen (19), and merchants or factors (17). It seems likely that many gentry fit Everitt’s “pseudo-gentry” category.³⁸ For example, William Lilly was described as esquire in his account, but elsewhere is identified as an apothecary. His level of indebtedness – several thousand pounds at death – suggests the distinction is moot. A number can be traced in other sources. They include at least five members of parliament, Joseph Martin, one of the leading figures in the New East India Company and South Sea Company, and Thomas Hodges, one-time attorney-general for Barbados.

While there can be little doubt that most of the deceased were wealthy, it is hard to establish their actual wealth. Accounts usually mention the value of the deceased’s estate (the “charge”) from the probate inventory. This is a partial window into wealth, excluding most real property and using sometimes questionable valuations for goods. Nonetheless, it gives us some guide to an individual’s relative position within the sample, and offers a proxy for income and wealth more generally. Over half the deceased recorded a charge in excess of £400. Some were extraordinarily wealthy: a quarter had charges over £1000 and a handful in excess of £10,000. At the other end, sixteen accounts had charges below £10. The composition of the group leaving accounts changed over this period: while the average charge of those who died in London fell slightly over the century, the charge in accounts from elsewhere rose substantially.³⁹ To put the PCC sample in context, we can compare the PCC accounts from the 1670s with those in two other major series, for East Kent and Lincolnshire. In Kent and Lincolnshire, the median charge in the 1670s was around £80, a fifth of the £416 median charge in the PCC accounts; only 6 and 7 percent of charges in those counties exceeded £500, compared to 44 percent in the PCC.⁴⁰

Consumption of medical and nursing services, 1670-1780

The most direct way the accounts answer the question of when the English came to rely on commercial medical practitioners is by the frequency with which they record the dying owing debts for medical and nursing services. In the simplest terms, the accounts suggest that substantial growth occurred over the long eighteenth century in the likelihood that the sick sought some medical or nursing assistance, as is shown in table 1.⁴¹ Among detailed accounts, three-quarters of deceased owed a medical or nursing debt in the 1780s, compared to three fifths in the 1670s, a surprisingly high figure given our expectation that accounts will under-record medical debts.⁴²

< **INSERT TABLE 1 NEAR HERE** >

Nursing and medicine followed divergent patterns. Consumption of medical services was relatively flat in the first half of the long eighteenth century. In both the 1670s and 1730s, around half of the deceased owed debts for medical services. By the 1780s, however, 60 to 65 percent owed debts for medical services. In contrast, only twenty to thirty per cent of accounts mention debts for nursing, with the incidence rising to the 1730s and then falling.

Within these national trends, wealth, gender and geography strongly affected people's propensity to seek out and purchase medicine and nursing care; they influenced their capacity to pay for care, the availability and nature of services, and their norms and expectations about consumption. We need to be cautious about interpreting variation at this level because the categories being discussed encompass quite varied environments, but there are nonetheless clear signs of differences in regional healthcare cultures, especially in the seventeenth century.

One of the sharpest divides in the English medical economy was between London, with its unique density of practitioners and medical institutions, and the rest of the country. If we separate the sample into those who had lived in London and those from the provinces (figure 1), we can see that most of the increase in medical consumption occurred *outside* the metropolitan area.

< **INSERT Figure 1 near here: Medical and Nursing consumption, London and Provincial Southern England** >

In London, levels of medical usage were relatively stable over the century, with around 50 to 60 per cent of deceased recording medical assistance. Provincial accounts, however, show a sharp rise between the 1730s and 1780s. By the 1780s those dying in the provinces appear to have had a higher propensity to resort to medical services than Londoners. This surprising finding may reflect the narrower and increasingly wealthy slice of provincial society whose estates reached the PCC, but the growth in medical consumption was somewhat larger among less wealthy testators in the provinces than among the richer, pointing towards a more general increase in engagement with practitioners.⁴³

In nursing, we can see much less of a contrast between London and elsewhere. Households' frequency of resort to nursing was consistently around a third higher in London than outside. That metropolitan households were more dependent on specialist hired care seems intuitively plausible given the capacity of the capital to sustain a distinct group of nurses. But both London and the provinces show similar trends, with little sign that the employment of nurses in caring for the sick was increasing in general.

The expansion in provincial consumption of medical services that occurred in the later eighteenth century reflects changes to life in small, rural communities, not provincial towns or cities. In part because of the significance of landowners among testators, the provincial sub-group were not primarily resident in towns (although many are of course likely to have spent part of the year in one). If we look only at those living outside towns with a population of over 1,000 people, the increase in medical consumption from 1730 to 1780 was even larger, from 48 to 78 percentage points.⁴⁴

As one might anticipate, wealthier men were more likely to have consumed medical services before they died than poorer deceased – on average 58 percent of the richest half of testators owed medical debts, compared to 51 percent of the poorer half. Richer male testators were also much *less* likely to have used nursing services, with 20 percent owing nursing debts compared to 27 percent of the poorer group, a substantial difference that was largely the result of choices in provincial households.⁴⁵ The greater availability and willingness of household servants to offer nursing care in these richer households is likely to be the cause.

Women's engagement with medical and nursing services was quite different from that of men. As figure 5 shows, whether richer or poorer, female testators were almost twice as likely to have owed debts for nursing as men. Almost half of women had employed a nurse.⁴⁶ Second, women's consumption of medical services was higher than that of men in the same

wealth category in all but one instance. This pattern is similar to that which Mortimer observed in East Kent, and quite different to that we observe in the Netherlands.⁴⁷

<INSERT Figure 2 near here. The effect of wealth and gender on level of demand for medical and nursing services>

The distinctive effects that gender and wealth had on the use of medical services and nursing indicate clearly that healthcare was not simply a normal good for which consumption would increase as disposable incomes rose. People's usage of commercial medicine and nursing was heavily shaped by the availability and capacity of other sources of assistance within the family and household. As most female testators were widows, it seems likely that household fragmentation lay behind women's higher levels of engagement with commercial medicine and nursing.⁴⁸ In other words, whereas men were often cared for by their wives, widows often had to hire nursing assistance and look outside for medical care.

Were the continuities and changes in consumption we see over the long eighteenth century associated with a change in the amount spent by the deceased on healthcare? Across the sample as a whole, the average (mean) debt for medical and nursing costs was £12. This is dragged up by a few large sums: the median debt was just over £5. A quarter of deceased owed less than £2, while only a third owed over £10, and just a sixth accrued debts of over £20 on medical expenses. Recall that this is for a population with moveable estates valued at around £400. The sums paid for physic and medicines in the PCC accounts were, however, substantially higher than Mortimer found in East Kent and Wiltshire in comparable periods, reflecting the wealth and metropolitan focus of the PCC sample.⁴⁹ They were also large relative to artisanal incomes: a skilled building craftsmen in mid-eighteenth century London earned £1 16s for a six day week, meaning that the median debt equated to three weeks' income.

Levels of expenditure increased in nominal terms over the long eighteenth century. Median debts for medical and nursing care rose by around a third over this period. Median expenditure was somewhat higher in London (£5.5) than provincial England (£5), reflecting the city's higher prices and wages. Londoner's debts increased from £5.3 to £6.6 between the 1670s and 1780s even though the proportion of the deceased who had used medical assistance remained stable.⁵⁰ However, as provincial English propensity to turn to medical

assistance approached and then surpassed London's, so the sums expended also converged. Provincial medical and nursing debts grew from just £3.7 to £6.3 over the century – providing both a measure of the emergence of a common English culture of medical consumption and a causal explanation for this development, through the incentives this gave practitioners to seek out patients in those areas.

These are nominal figures for expenditure on an unstable array of medical and nursing goods and services. Inflation only affects prices in the later eighteenth century. If we use Allen's consumer price index, based largely on foodstuffs, to deflate expenditure into 1670 pounds, then the arrival of inflation from the 1750s means that the median real value of medical debts in the 1780s and 1790s had fallen back to pretty much the same level as in the 1670s in London, although provincial expenditure had grown even in real terms.⁵¹ Without more information about the exact mix of medical services and goods being bought, it is impossible to know if these figures reflect changes in the price of medical services relative to food, or shifts in the quantity of medical goods and services being purchased. The fragmentary evidence that we possess on wholesale drug prices suggests they are relatively flat over the century, so we might speculate that the rise in debt reflects an expansion in the amount of medicine used.⁵²

Wealth affected the amount people spent on medical and nursing care to a much greater extent than it influenced the likelihood they would use medical care at all. The wealthier deceased had debts that were, on average, twice those accumulated by their relatively poorer peers (£7.7 to £3.3).⁵³ Most of the growth in nominal expenditure occurred in the relatively richer half of the sample; among those with less than the median charge, nominal medical debts were unchanged, implying a fall in debt in real terms.

For the generally wealthy group captured in this sample, there is little sign that medical expenditure ever threatened to consume a large share of a household's resources. The few very large debts are striking in the exceptionality of the care they describe. The largest medical debtor was George James, a London printer, who died around 1735 owing £360 for medical services. Two hundred pounds of this was the cost of extended and intensive surgical care:

“the deceased was for seven years before his death very much troubled and afflicted with a swollen leg and was during such time under the care of Mr. William Green a surgeon since deceased...the said Green did visit and attend on him the said deceased

sometimes once and sometimes twice on almost every day during that time in order to dress and take care of such leg”⁵⁴

The remaining £160 was due to John Markham, his apothecary. Medical expenses equated to 65% of the value of James’ estate. It was a major debt, but not all consuming. No other account came close. The next largest debts were £138 in the account of Sir Edward Becher, a former alderman of London, £120 in the account of Charles Cornwallis, 4th Baron Cornwallis and paymaster of the forces at the time of his death, and £112 in the account of David Drummond.⁵⁵ Unlike Green, their estates mainly dwarfed these debts. Becher’s charge was just £480, but Cornwallis’ was £6,967 and Drummond’s £7,055. And it must again be emphasized that these large debts are exceptional. For fourth-fifths of the deceased, their medical and nursing debts consumed less than 5% of their estate. It is hard not to suspect that historians’ emphasis on the consumption of “vast quantities of medicine” in the eighteenth century is too dependent on exceptional examples.⁵⁶

How do the levels of consumption we observe in the PCC accounts compare to Mortimer’s earlier findings for East Kent? Mortimer offers some strong warnings about the risks of directly comparing evidence from jurisdictions with different accounting conventions, and the PCC accounts represent a much wealthier constituency than the Kentish data.⁵⁷ However, given that the PCC accounts share some of the character of the East Kent accounts in the level of detail that they contain, the exercise can at least be attempted. Indeed, when we do put the two series together (figure 3), the results look plausible.

<INSERT Figure 3 near here: Medical and Nursing Consumption, PCC London, PCC provincial and Kent.>

This comparison of patterns of usage of medical and nursing assistance over nearly two centuries in the southern half of England suggests that growth in medical care was on-going, but not always continuous, from the mid-seventeenth to the late eighteenth century. There was no end to the “medical revolution” in this period, making this another rather drawn out historical revolution, for which we might doubt the utility of such language. High levels of resort to medical services had appeared earliest in London, as one might anticipate given the size of the city, its wealth, and the abundance of practitioners operating there. Wealthy Londoner’s were roughly twice as likely to have used a medical practitioner in the 1670s than

their Kentish peers. But London rates had also reached a plateau by the late seventeenth century, at which they remained at over the next century.

Consumption patterns were more dynamic outside the capital. The moderately wealthy deceased in East Kent caught up with wealthy Londoners and the rich in other parts of provincial Southern England in the later seventeenth century. The Kentish elite may have been unusually highly engaged with commercial medicine in the early eighteenth century. If we take the PCC provincial accounts as a sample of an increasingly wealthy rural elite, they suggest that the rate of resort to medical services outside London reached even higher levels by the late eighteenth century.

Levels of resort to nursing services remained at a much lower level than for medical services, although they were around 50 percent higher in the eighteenth than the early seventeenth century. We might see in this some sign that sick nursing emerged as a distinctive occupation, as Mortimer suggested. Together with the gendering of usage of both medical and nursing services it underlines the continued importance of domestic provision and household structure to the ways in which illness was managed in early modern England.

The structures of medical supply: what kind of practitioners did the sick use?

Evidence of the kind contained in probate accounts on changing levels of usage of medical care is rare in histories of medicine. Arguments about the relative significance of different types of practitioner are much more common, however. The long eighteenth century is frequently characterized as seeing profound shifts in the importance of different types of medical practitioners. In particular, Loudon has suggested that “general practitioners” emerged in this period.⁵⁸ Can we observe this shift when we examine the types of practitioners seen by the deceased? And does it help us to explain the changes we see in demand?

To compare the kinds of practitioner in accounts over time, we group occupations into five general categories: physician, surgeon, apothecary, nurse and attendant. Physician includes practitioners identified as “doctor” and “physician”, with the latter term becoming more common over time.⁵⁹ Constructing these occupational groups asks much of the information on occupations contained in probate accounts.⁶⁰ Nonetheless, these broad categories cover 92% of the roughly 1,716 practitioners in the accounts for whom an occupational title was

given or implied.⁶¹ Another 66 individuals fell outside these five categories, including twelve servants who provided nursing, nine surgeon-apothecaries, thirteen druggists, and four chemists. These “other” practitioners became more important over time. In the 1670s and 1730s they appear in twelve to fourteen percent of accounts with medical debts; by the 1780s, they appear in 22 percent. It is worth noting in passing the absence of any less “orthodox” descriptors, and the small share (4%) of practitioners without one of these standard titles: to the extent that nomenclature gives a guide to the medical fringe, it appears largely absent from these terminal medical encounters.

When we put these occupations alongside the types of service provided, we can see a surprisingly high degree of occupational specialization among medical practitioners. Around two-thirds of accounts include some details on the debt in question.⁶² We coded these based on the appearance of seven common formulations which appear in 93 percent of records with any description of the debt: for “attendance”, for medicines (including any specific drugs), “for physic”, for surgery (including any specific operations), for “advice”, for “nursing”, and “necessaries and/or diet”.⁶³ As figure 4 reveals, specialization is apparent in several key areas. Surgeons supplied 90% of surgery, apothecaries supplied 74% of physic and medicines, and physicians supplied 83% of “advice”. Possibly the occupational labels assigned to practitioners informed the language of the accounts and vice versa, but this degree of functional differentiation implies that Pelling’s emphasis on occupational diversity in medicine, developed for the sixteenth and early seventeenth centuries, may not hold as well for the long eighteenth century.⁶⁴

<insert FIGURE 4 NEAR HERE>

We can find some support for concluding that medical specialization had increased in a comparison with Mortimer’s finding for East Kent in the previous century. Mortimer also found that advice was closely tied to physicians. However, in East Kent 26 percent of medicines were provided by physicians and doctors, 16 percent by surgeons and 58 percent by apothecaries. The role of apothecaries in Kent in supplying medicines *declined* over the 17th century, from 76 to 54 percent, which Mortimer attributes to the spread of doctors from towns into rural areas.⁶⁵ For eighteenth-century London and provincial England, the comparable figures for medicines (excluding debts for physic to match Mortimer’s categories) are 4 percent by physicians, 6 percent by surgeons, and 90 percent by

apothecaries.⁶⁶ For the deceased in the long eighteenth century, medicines were primarily something that apothecaries supplied.

Apothecaries were the most common type of medical practitioner used by the sick, appearing in 69 percent of the accounts of those who sought medical assistance – twice the level of physicians, who featured in 35 percent of accounts. Surgeons were much rarer, appearing in a sixth of accounts. Nurses appeared in a third of accounts, while “attendants” turn up just in one in twenty accounts. Moreover, apothecaries were the first port of call for the sick. When the deceased had debts to just *one* identifiable practitioner, in 59% of cases they had seen an apothecary, a pattern similar to that found in the inland regions of the Netherlands.⁶⁷

The sick generally plumped for the help of a limited number of medical practitioners. Most favored one individual in any category of practitioners, rather than consulting with multiple doctors or surgeons at the same time. Just a quarter of those who saw a doctor owed debts to two physicians. Similar proportions hold for apothecaries. Over the period, there was a fall in the average number of different practitioners used by the deceased. In the 1670s, the deceased recorded debts to an average of 2.5 different medical and nursing practitioners. By 1780, this had dropped to 1.9 different medical and nursing practitioners.⁶⁸ Neither figure suggests that calling in “tribes of doctors” was a commonplace event.⁶⁹

The mix of practitioners to whom the sick turned is markedly different to that suggested by the literature. Three points stand out. First, surgeons play a surprisingly limited role in a time traditionally identified with their “rapid rise”.⁷⁰ For East Kent, Mortimer observed a markedly different medical mix, dominated by surgeons (46%) and doctors (42%), with apothecaries as minor players (12%).⁷¹ Even if we distinguish between metropolitan and provincial accounts in the PCC sample, the difference with East Kent persists. Possibly this reflects the wealth of the PCC sample, but surgeons were actually used more frequently by richer testators.⁷²

Rather, East Kent may well have possessed a relatively unusual density of surgeons, much as the maritime Netherlands did, reflecting the coastal, trading orientation of the county.

Second, there is not a single direct reference to a barber surgeon in the PCC accounts, despite the fact that over two-thirds of accounts were for people dying in London where the guild of Barber Surgeons remained united until 1745: lay terminology appears to have firmly distinguished the language of occupation from that of the guild in the city. Finally, the accounts record a surprisingly small number of surgeon-apothecaries for a period often identified as their heyday. Their dominance (82%) among practitioners in the *Medical*

Register of 1783 is not paralleled in the accounts.⁷³ Instead, executors continued to prefer the older categories, keeping apothecaries distinct, suggesting that historians may have been too heavily influenced by the decision of the *Register's* compiler, the physician Samuel Simmons, to group surgeons and apothecaries together.⁷⁴

One group of practitioners declined in popularity among the sick over the long eighteenth century: physicians. The share of accounts reporting any medical care which included debts to physicians fell markedly, from 52 percent in the 1670s to 15 and 20 percent in the 1730s and 1780s samples. In contrast, the share using apothecaries, surgeons or nurses remained broadly stable. The physicians' decline was sharpest in the provinces, where the percentage of sick who had seen a physician plummets from 67 to 21 percent between 1670 and 1730, despite the simultaneous rise in the likelihood that these people would have seen a practitioner of one kind or another.⁷⁵ There was no expansion in the use of other kinds of practitioners to fill the gap.

Instead, the physicians' downfall was the move away from using a physician and an apothecary together. The sick turned away from combining care from different types of practitioner. In the late seventeenth century, 44% of the deceased owed debts to more than one kind of medical practitioner.⁷⁶ By the 1780s, this had fallen to 18%. The largest change occurred in the provinces, where the proportion of accounts reporting a physician and apothecary fell from 33% to 12% from 1670 to 1730, and then to 6% in the 1780s. In London, the fall was from 25% to 8%, followed by a recovery to 10% in the 1780s.⁷⁷ As the wealthy were more likely to use more than one type of practitioner, and the wealth of the sample rises over time, this shift is likely to be under-stated.⁷⁸

Over the long eighteenth century, the dying turned from engaging directly with a range of specialized medical practitioners to using a single practitioner, usually an apothecary, as their main source of assistance. They abandoned the classic tripartite model of medical practice in which physician, surgeon and apothecary operated as independent specialists who combined to offer care, and who each maintained a direct relationship with the sick. By the 1730s, tripartite practice was a rarity. In many cases, the apothecary would now supply advice, medicines and treatments. The sick's willingness to concentrate their care in the hands of a smaller number of practitioners over this period likely resulted in growing incomes for individual practitioners. Further evidence for this change is visible in the rising share of instances in which it was apothecaries who were the practitioner described as having

“attended” or “visited” the sick. In the 1670s, physicians were responsible for 65% of attendance, and apothecaries only 23%; by the 1780s, physicians supplied just 40% while apothecaries now offered 47%.⁷⁹ In short, apothecaries became general practitioners.

It is difficult at first glance to reconcile this account of physicians’ displacement by apothecaries operating as general practitioners with the evidence of occupational specialization contained in the texts of debts. But arguably it was the apothecaries’ specialization in providing medicines and drugs that was the key to their appropriation of the physicians’ domain. As therapeutics obtained an ever more central place in patients’ expectations of medical strategies, the apothecaries’ shop gave them a site in which they could demonstrate their expertise, secure a living from goods as well as services, and – quite naturally – extend their remit to offering advice alongside drugs. The apothecaries’ tactics could not easily be imitated by physicians seeking to retain some separation from “trade” and manual arts, and had long been attracting abuse from physicians.⁸⁰

The early eighteenth century saw the close of a major reorientation in the working relationships of medical practitioners. Physicians and apothecaries converged to offer similar, rather than complementary, medical services, and so to compete directly. Indeed, this shift may have produced a rise in the productivity of practitioners that helped meet the rise in demand for care from the sick. This chronology fits well with histories of institutional and legal conflicts over practice of this period, conflicts that came to their head in the Rose case of 1704 through which the College of Physicians’ attempts to bar apothecaries from providing medical advice were finally frustrated.⁸¹ However, before taking this as a vindication of Holmes’ thesis that the medical profession emerged between 1680 and 1730, it should be emphasized that deceased who had used a combination of practitioners were *already* in the minority in the 1670s, implying that the process was already well under way, as Wallis has argued elsewhere.⁸²

Conclusions

An initial – and necessarily provisional - answer to the question we began with about when the English came to rely on commercial medical care appears reasonably clear. The probability that the sick would turn to a medical practitioner in their time of need rose substantially over the long eighteenth century, at least among the relatively wealthy in southern England. Londoners had led the shift towards regular and heavy usage of commercial medical provision. Rates of resort to medical practitioners were high but stable in

the city from the 1670s. Provincial consumption converged with and then exceeded metropolitan levels over the century, lifting the overall level. The use of nursing assistance expanded as well, but remained much less common. In both town and country, the amount spent on medical and nursing care also went up, perhaps due to rising prices, but more likely because the dying were making more intensive use of paid-for medical and nursing services. The medical revolution that Mortimer identified in the seventeenth century ran on through the eighteenth, as the habit of turning to medical practitioners diffused across the small towns and countryside of England. Moreover, the intensity of medical consumption we see in London by the 1670s points to an earlier starting point for growth than the sources for Kent suggest. The PCC accounts cover a slice of wealthy, southern English society. These observations are limited to individuals experiencing serious illness, and responses to minor conditions may have differed. Developments in consumption among the middling sort and, particularly, the poor may have followed different trajectories; we do not yet know. But with these caveats in mind, the accounts reveal a convergence in patterns of consumption that signals the development of a national culture of medical consumption by the late eighteenth century.

With growth came structural changes in the medical sector. To the extent that we still wish to talk in terms of a “medical marketplace”, we need to recognize its shifting form.⁸³ By the late eighteenth century, the sick now relied on a single general practitioner rather than an array of different specialists. The tripartite model that combined different practitioners on a case visibly dwindled in the early eighteenth century – and had not started the century in robust health. In its place, single practitioners now acted as generalists. Indeed, as each of the sick consulted fewer practitioners, this transition may have allowed medical practitioners’ individual productivity to increase such that only a modest expansion in their numbers was needed. We should also recognize two other aspects of this development. First, that it was apothecaries that dominated the new mode of practice in part reflects the greater role that medical substances were playing in medical exchanges: therapy, particularly drugs, matter to this story. Second, this was a shift apparent among the richest echelons of society. The rise of general practice was not (just) a consequence of the growth of the middling sort.

It is easy to read into this an argument that commercial medical practitioners displaced domestic provision. However, it is not at all clear that this occurred in the aggregate. We have seen some clear evidence that domestic and commercial care could substitute for each other. Women’s higher rates of usage of medicine and nursing care suggest that much at least. But it

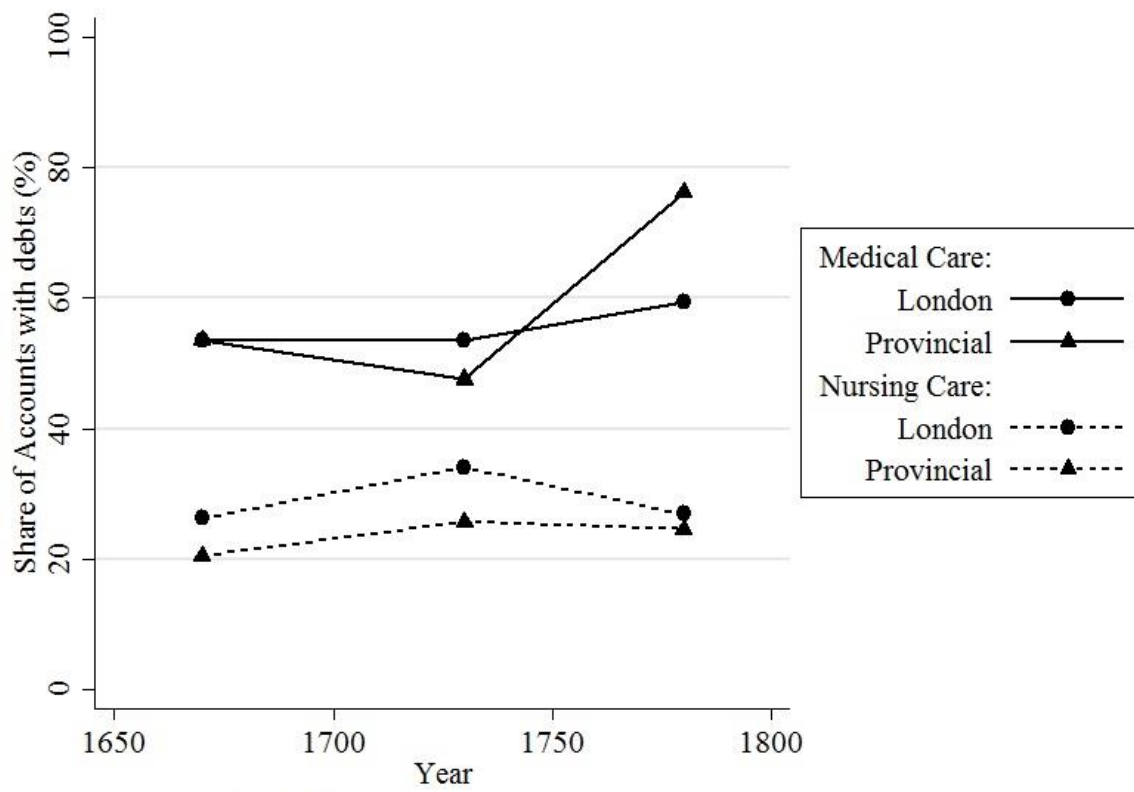
is also possible that commercial resources complemented domestic care, and encourage a wider and more frequent engagement with self and family care. The expanding literature on domestic medicine and medical knowledge generally reveals a close interaction with commercial practitioners, not an opposition.⁸⁴

Explaining why the focus of demand for medicine turned to commercial providers is a far more difficult challenge than demonstrating that change occurred. We have not been able to explore Mortimer's hypothesis about the ruralization of medical practitioners, or the potential impact of hospitals or training on practitioners' identity, confidence or position, all factors that Loudon and Holmes highlight.⁸⁵ And unfortunately, there is no way to identify changes in the method, techniques or capacities of medicine from the accounts, although there is little *prima facie* reason to expect that either doctors' efficacy or the burden of sickness contributed substantially to these developments. However, it is still possible to identify some partial answers to this question. First, urban, particularly metropolitan, society led the move to embrace commercial medical provision. Combined with the potential for the elite's periodic urban experiences, during their education and later through the season, to spread new norms across the country, this offers a solid case for the significance of urban development in changing attitudes to healthcare (and potentially services more generally), and a plausible mechanism for their transmission. Second, the wealth of the people whose last days were recorded in these accounts show the expansion in medical consumption was a product of changes in preferences – in culture and norms, not resources or wealth. While greater wealth did go hand in hand with greater spending on healthcare, there is little reason to believe that even the poorest of deceased in our sample would have struggled to afford some form of commercial medical care, if they had desired it. Perhaps supply mattered. But the compelling body of research demonstrating an abundance of practitioners across much of England that we surveyed at the beginning of our discussion suggests that accessing practitioners was unlikely to be a binding constraint. The rise of what we might call the medical habit was, in short, a matter of taste.

Acknowledgements:

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Figure 1



Source: sample of detailed PCC accounts, see text.

Figure 2

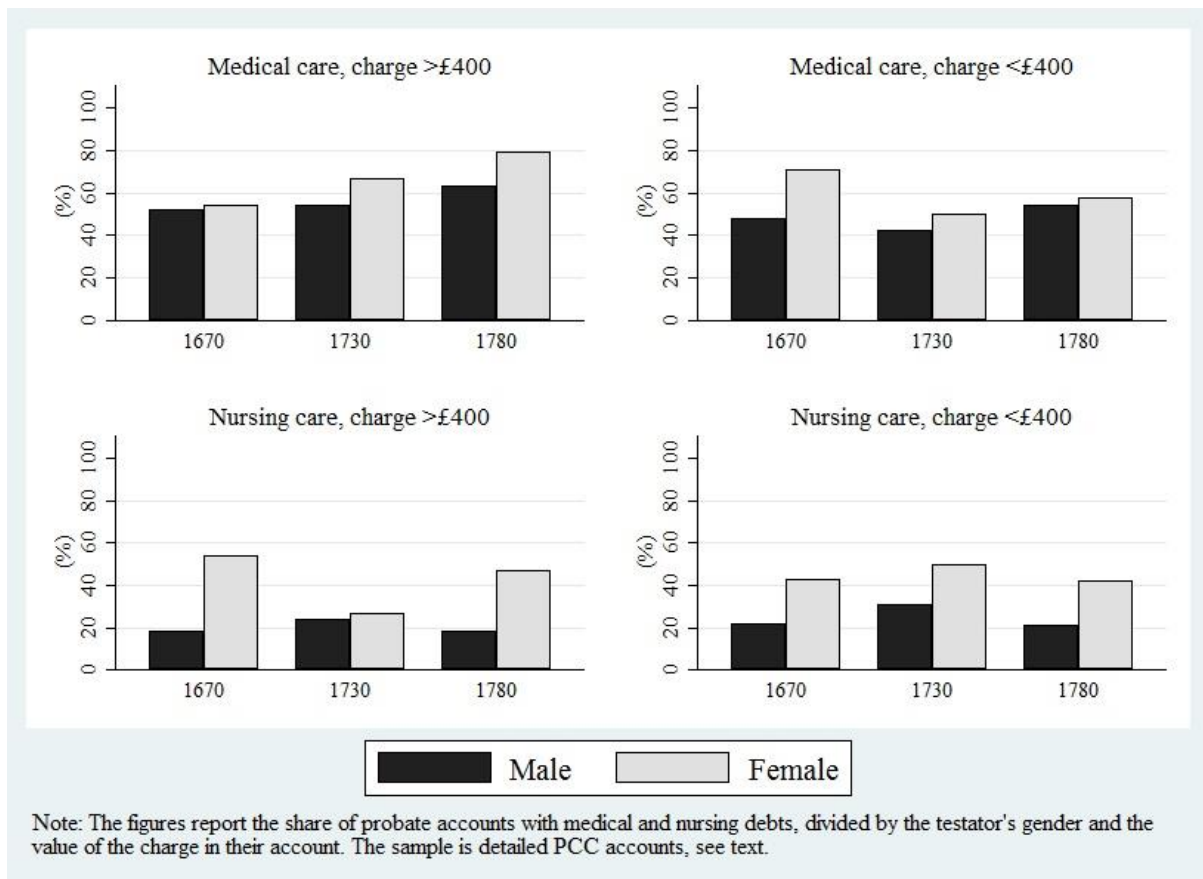
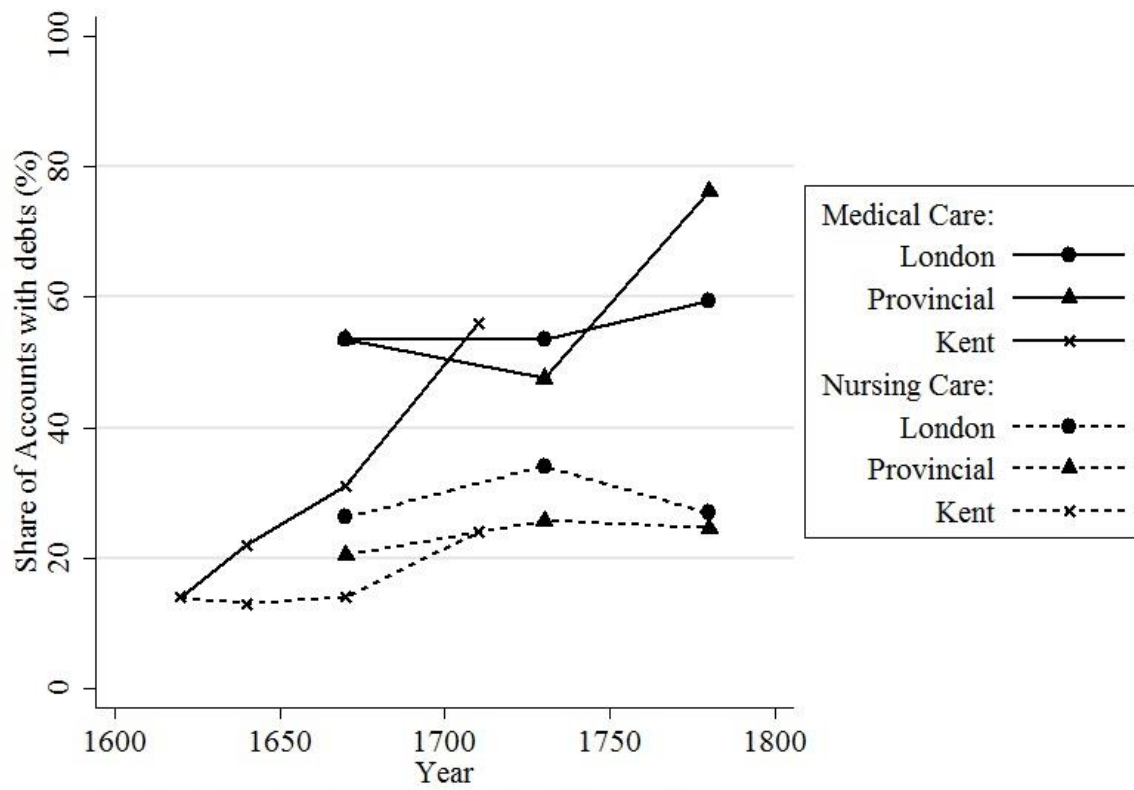
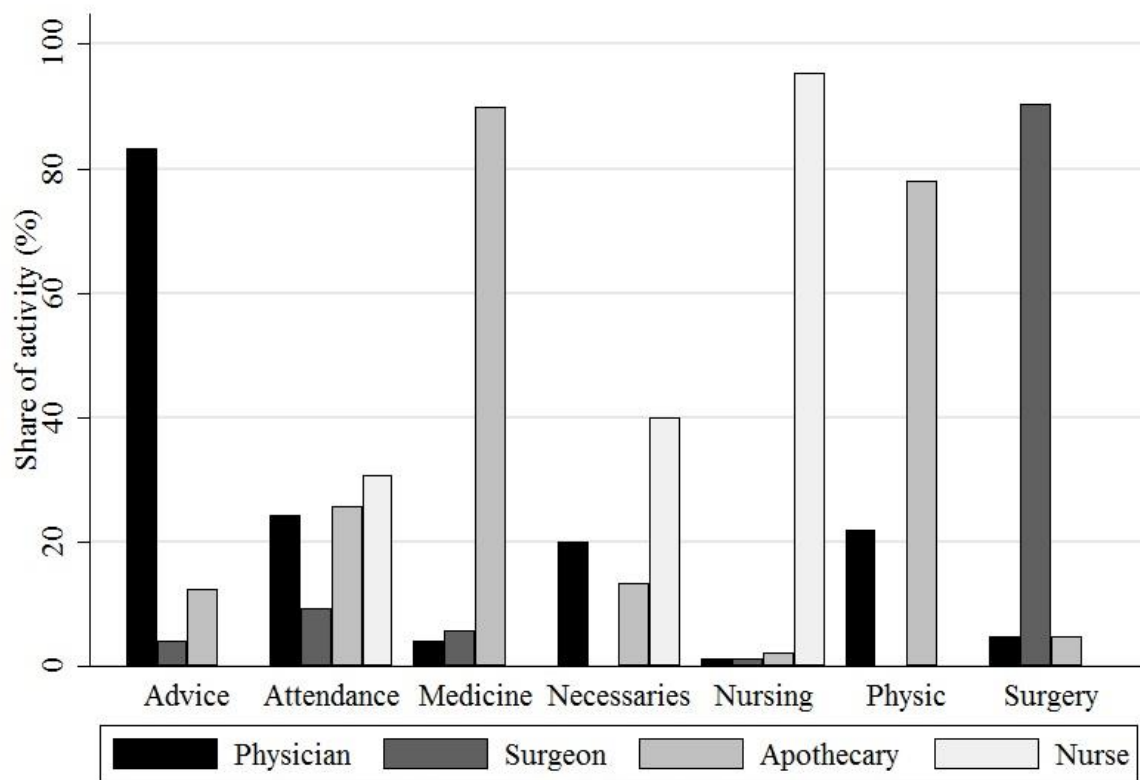


Figure 3



Source: sample of detailed PCC accounts, see text; Mortimer, *Dying*.

Figure 4



Source: sample of all PCC accounts with recorded medical or nursing expenditure.

Table 1:

Period	All Accounts (%)			No.	Detailed Accounts (%)			No.
	Medical or nursing	Medical	Nursing		Medical or nursing	Medical	Nursing	
1670	55	51	22	424	61	56	24	339
1730	58	49	28	377	62	52	31	322
1780	66	60	23	408	73	65	26	342
All	60	54	24	1209	65	58	27	1003

Note: Excludes inventories where the individual died abroad. The 'Detailed Accounts' sample is restricted to accounts with information on funeral expenditure.

Endnotes:

1. Erwin Heinz Ackerknecht, *A Short History of Medicine* (New York, 1955): 215-7; Fielding H. Garrison, *An Introduction to the History of Medicine with Medical Chronology, Suggestions for Study and Bibliographic Data*, 4th ed. (Philadelphia, 1929): 244-406; Arturo Castiglioni, *A History of Medicine*, trans. E. B. Krumbhaar, 2nd ed. (London, 1947): 504-650; Edward Shorter, "The History of the Doctor-Patient Relationship," in *Companion Encyclopedia of the History of Medicine*, ed. W. F. Bynum and Roy Porter (London, 1993): 783-7.
2. Margaret Pelling and Charles Webster, "Medical Practitioners," in *Health, Medicine and Mortality in the Sixteenth Century*, ed. Charles Webster (Cambridge, 1979); Margaret Pelling, "Medical Practice in Early Modern England: Trade or Profession?," in *The Professions in Early Modern England*, ed. Wilfred Prest (London, 1987); Margaret Pelling, *The Common Lot: Sickness, Medical Occupations and the Urban Poor in Early Modern England* (London, 1998); Margaret Pelling, *Medical Conflicts in Early Modern London: Patronage, Physicians, and Irregular Practitioners 1550-1640* (Oxford, 2003). Other notable contributions include: Lucinda McCray Beier, *Sufferers and Healers: The Experience of Illness in Seventeenth-Century England* (London, 1987): 8-50; Harold J. Cook, *The Decline of the Old Medical Regime in Stuart London* (Ithaca, 1986); Faye Getz, *Medicine in the English Middle Ages* (Princeton, 1998).
3. Matthew Ramsey, *Professional and Popular Medicine in France, 1770-1830: The Social World of Medical Practice* (Cambridge, 1988): 18-38; David Gentilcore, *Healers and Healing in Early Modern Italy* (Manchester, 1998); Irvine Loudon, *Medical Care and the General Practitioner 1750-1850* (Oxford, 1986); Dorothy Porter and Roy Porter, *Patient's Progress: Doctors and Doctoring in Eighteenth-Century England* (Oxford, 1989); Andrew

Wear, *Knowledge and Practice in English Medicine, 1550-1680* (Cambridge, 2000); Mary Lindemann, *Health and Healing in Eighteenth-Century Germany* (Baltimore, 1996); M. R. McVaugh, *Medicine before the Plague: Practitioners and Their Patients in the Crown of Aragon, 1285-1345* (Cambridge, 1993).

4. See, for example, Cook, *Decline*: 34-35; Laurence Brockliss and Colin Jones, *The Medical World of Early Modern France* (Oxford, 1997): 23-24; Porter and Porter, *Patient's Progress: Doctors and Doctoring in Eighteenth-Century England*: 9-10; Roy Porter, "The Eighteenth Century," in *The Western Medical Tradition, 800 Bc to Ad 1800*, ed. Lawrence I. Conrad, et al. (Cambridge, 1995), pp. 451-2; Anne Digby, *Making a Medical Living: Doctors and Patients in the English Market for Medicine, 1720-1911* (Cambridge, 1994): 2, 26, 40-41; R. K. French, *Medicine before Science: The Rational and Learned Doctor from the Middle Ages to the Enlightenment* (Cambridge, 2002): 188. Cf. Pelling, *Medical Conflicts*: 7-9.

5. E.g.: Loudon, *Medical Care*: 22-23. See also: Digby, *Medical Living*; Ivan Waddington, *The Medical Profession in the Industrial Revolution* (Dublin, 1984); Toby Gelfand, "The History of the Medical Profession," in *Companion Encyclopedia of the History of Medicine*, ed. W. F. Bynum and Roy Porter (London, 1993): 1124-1125, 1134-5; Michael Brown, *Performing Medicine: Medical Culture and Identity in Provincial England, c. 1760-1850* (Manchester, 2011): 115-6; Ramsay, *Professional and Popular*: 58-62, 115-8.

6. For the most influential application of this, see Pelling and Webster, "Medical Practitioners." The approach was then widely applied: e.g. Digby, *Medical Living*, Ch. 1; Brockliss and Jones, *Medical World*: 521-9.

7. See the useful review in Jan De Vries, *The Industrious Revolution : Consumer Behavior and the Household Economy, 1650 to the Present* (Cambridge, 2008).

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8. Ian Mortimer, *The Dying and the Doctors : The Medical Revolution in Seventeenth-Century England* (Woodbridge, Suffolk, 2009); Ian Mortimer, "The Triumph of the Doctors: Medical Assistance to the Dying, C. 1570-1720," *Transactions of the Royal Historical Society* 15 (2005): 97-116; Ian J. F. Mortimer, "Medical Assistance to the Dying in Provincial Southern England, C1570-1720" (PhD, University of Exeter, 2004).
9. Patrick Wallis, "Exotic Drugs and English Medicine: England's Drug Trade, c. 1550–c. 1800," *Social History of Medicine* 25 (2012): 20-46.
10. Alex Bamji, "Medical care in early modern Venice" *Journal of Social History* (2016): XX-XX; Heidi Deneweth & Patrick Wallis, "Households, consumption and the development of medical care in the Netherlands, 1650-1900," *Journal of Social History* (2016): XX-XX.
11. Stephen Broadberry, Bruce M. S. Campbell, and Bas van Leeuwen. "When Did Britain Industrialise? The Sectoral Distribution of the Labour Force and Labour Productivity in Britain, 1381–1851." *Explorations in Economic History* 50 (2013): 16-27; Leigh Shaw-Taylor and E. A. Wrigley, "Occupational Structure and Population Change," in *The Cambridge Economic History of Modern Britain*, ed. Roderick Floud, Jane Humphries, and Paul Johnson (Cambridge, 2014).
12. Clare Gittings, *Death, Burial and the Individual in Early Modern England* (London, 1984); Amy Louise Erickson, *Women and Property in Early Modern England* (London, 1993); Ralph Houlbrooke, *Death, Religion, and the Family in England, 1480-1750* (Oxford, 1998); Peter Spufford, *Index to the Probate Accounts of England and Wales*, The Index Library (London, 1999).
13. Ian Mortimer, "Why Were Probate Accounts Made? Methodological Issues Concerning the Historical Use of Administrators' and Executors' Accounts," *Archives* 31 (2006); Amy Louise Erickson, "Using Probate Accounts," in *When Death Do Us Part: Understanding and*

Interpreting the Probate Records of Early Modern England, ed. Nesta Evans, Tom Arkell, and Nigel Goose (Oxford, 2000); Jacqueline Bower, "Introduction to Probate Accounts," in *Index to the Probate Accounts of England and Wales*, ed. Peter Spufford (London, 1999).

14. Henry Swinburne, *A Briefe Treatise of Testaments and Last Willes* (London, 1590), part 6, sect 8: 229. The 1677 edition amplifies the list of order of payment. See also Richard Burn, *Ecclesiastical Law*, 3rd. ed. (London, 1775), vol. 4: 229-262.

15. The rate is similar in other jurisdictions: Mortimer, "Medical Assistance:" 78.

16. The National Archives (hereafter TNA), PROB 31/1/5

17. Bower, "Introduction:" xxix-xxx.

18. Mortimer, *Dying*: 5-6.

19. Mortimer, *Dying*: 8-9.

20. TNA, PROB 31/100/33. See also: PROB 31/121/603 ("in part"); PROB 31/130/507 ("part of").

21. TNA, PROB 31/189/447

22. TNA, PROB 31/190/493

23. TNA, PROB 5/5373 (Elias Pledger); Dr Williams' Library, "Elias Pledger's Diary," MS 28.4, f.1. In our defence, the account is brief, only mentioning funeral expenditure because these costs had been withheld by a creditor, and Pledger's son, Elias junior, who later described his father's death in the front of his diary, was eleven and away at school at the time.

24. Pelling, *Medical Conflicts*: 245-73; Gianna Pomata, *Contracting a Cure: Patients, Healers, and the Law in Early Modern Bologna* (Baltimore, 1998).

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25. Craig Muldrew, *The Economy of Obligation: The Culture of Credit and Social Relations in Early Modern England* (Basingstoke, 1998); Margot C. Finn, *The Character of Credit : Personal Debt in English Culture, 1740-1914* (Cambridge ; New York, 2003).
26. Mortimer, *Dying*: 9.
27. Pelling, *Medical Conflicts*: 245-74.
28. Medical: 314 of 1189 entries; Nursing: 236 of 413 entries.
29. Mortimer suggests that debts to medical practitioners on “book” or on “bond” may be particularly likely to relate to services provided long before the final sickness and death of the deceased and so excludes these from some of his analysis. We include these, as book debts relate to the recording of transactions not their timing, and have a priority in the probate process that implies that this terminology need not relate to claims on the estate that were more distant in time from death than non-book debts.
30. This occurs in 135 of the account entries used here.
31. Mortimer, “Assistance:” 81. Patrick Wallis, “Competition and Cooperation in the Early Modern Medical Economy,” in *Medicine and the Market in England and Its Colonies, c.1450-c.1850*, ed. Mark Jenner and Patrick Wallis (London, 2007).
32. Cox and Cox, “probate, 1500-1800.”
33. Three series are used here: TNA, PROB 5, PROB 31 and PROB 32. PROB 5 is well indexed, but accounts in PROB 31 were identified by sifting through mixed boxes of probate records. Consequently, only a proportion of surviving accounts were identified, and a detailed indexing of PROB 31 would uncover more.
34. The distribution of the sample is described in detail in Patrick Wallis & Teerapa Pirohakul, “Medical Revolutions? The growth of medicine in England, 1660-1800,” LSE Economic History Working Paper 185 (2014): figure 1.

35. Mortimer, "Assistance:" 69-70.

36. Ten percent were women (124 of 1209). Gender was inferred from forename. The 72 people who died abroad or at sea were excluded.

37. 13 percent were gentry, including gentlemen (41), esquires (86), knights (10). Fourteen were titled aristocrats.

38. Alan Everitt, "Social Mobility in Early Modern England," *Past & Present* 33 (1966).

39. The mean and median charges in provincial accounts were £903 and £383 respectively in the 1670s and £1,602 and £732 in 1780s; in London they were £1,581 and £402 in the 1670s and £1,402 and £386 in the 1780s.

40. Bower, "Introduction:" lviii, lx. For a detailed representation of charge levels, see: Wallis & Pirohakul, "Medical Revolutions?" working paper: Fig. 2.

41. Debts for goods used during illness which may have been selected and applied domestically without consultation with a medical practitioner, are not counted here (e.g.: payments for asses' milk, for "necessaries during illness," "for ale and wine during sickness"). Such debts occur rarely (in just 46 accounts). In every case the account also records other debts for medical or nursing services.

42. Where the reason for the debt is not clear, "medical" debts are counted if creditors were physicians, doctors, surgeons, apothecaries, druggists, or chemists. "Nursing" debts are taken as debts to individuals identified as "nurse" or "attendant" and those who are identified as being paid for providing "nursing" or "attendance."

43. For testators with charges of £0-£200, the share with medical debts rose from 37% to 75% between the 1730s and 1780s. For those with charges of £200-£400, it grew from 48% to 64%.

44. Urban populations were derived from Jan Nov De Vries, *European Urbanization 1600-1800* (London, 1984).and Peter Clark and Jean Hosking, *Population Estimates of English*

Small Towns, 1550-1851, Rev. ed. ed. ([Leicester], 1993). For the 1670s we use De Vries' 1700 estimates; for the 1730s and 1780s, we use his 1750 estimates. For small towns we use the Hearth Tax (1660s-70s) or the 1811 census, biasing the test against over-estimating the rural population by using whichever figure was larger.

45. Using a two-sample t-test, the difference in medical consumption is significant at the 1% level ($t=3.155$), and nursing consumption is significant at the 10% level ($t=1.861$) The results also hold if we apply Mortimer's socio-economic ranking (comparing groups A with BCD) rather than dividing the sample at the median charge (£400). Mortimer's ranking is explained in Mortimer, "Assistance:" 97.

46. Among richer testators, the difference between male and female medical consumption is significant at the 10% level ($t = 1.767$) and nursing consumption is significant at the 1% level ($t=3.275$) using two sample t-tests. Among poorer testators, the difference in medical consumption was significant at the 5% level ($t=2.502$) and nursing at the 1% level ($t=3.931$). We group periods to obtain sufficient sample size.

47. Mortimer, *Dying*: 24-7. Again, the results hold if we use Mortimer's socio-economic categorisation.

48. Of 123 female testators, 87 were identified as widows, 27 as spinsters, 5 were titled, 2 were described as "wife of," and one was a hospital matron and one was a bookseller.

49. For comparison, I calculated the average sum per item categorised as "physic" and used Mortimer's socio-economic categorisation. In 1670, for status groups A, B, & R this was £4 in PCC accounts compared to £1.6 in East Kent and £1.8 in Wiltshire; for status groups C, D, & S this was £3.5 in PCC accounts against £0.9 in East Kent and £1.1 in Wiltshire. For medicines, in 1670, the PCC average is £6.9 compared to £2.2 in East Kent (1660-89). In 1730 PCC medicines average £6.3 against £1.9 in East Kent (1690-1719). Mortimer, *Dying*: 75, 78.

50. We discuss median expenditure here because the means are affected by a small number of large outliers. Detailed information on mean and medians for each sample period is in Wallis & Pirohakul, "Medical Revolutions?" working paper: table 2.

.51 Median real debts for London were £5.09 in the 1670s and £4.95 in the 1780s; in the provinces, the figures were £3.70 and £4.80. Debts in 1670 pounds using Allen's CPI. R. C. Allen, "The Great Divergence in European Wages and Prices from the Middle Ages to the First World War," *Explorations in Economic History* 38 (2001). Note that using this CPI may overstate inflation for the wealthy because of the heavy weighting given to foodstuffs: P. T. Hoffman et al, "Real Inequality in Europe since 1500," *Journal of Economic History* 62 (2002).

52. Wallis, "Exotic Drugs." The accounts unfortunately lack the detail necessary to generate a price series Cf. Mortimer's "rough price index:" *Dying*: 74-76; Loudon, "Provincial."

53. Mortimer observes similar differentials in East Kent: *Dying*: 88.

54. TNA, PROB 31/182/691.

55. TNA, PROB 31/118/461 (Becher); PROB 31/22/320 (Cornwallis); PROB 31/855/757, Drummond. One larger debt, £148 for "necessaries" in John Skinner's account of 1721 was excluded because it was unknown if this related to necessaries during illness and was paid to a relative TNA, PROB 31/1/7.

56. Loudon, "Provincial Medical:" 24 (quotation). Similar views are common in Porter's work, e.g.: *Patients Progress*: 157-9.

57. Mortimer, *Dying*: 46-7.

58. Loudon, *Medical Care*.

59. In 1670, if we count only fully-stated occupational labels (e.g. "Smith, the physician," or "paid the doctor"), "doctors" make up 53% of the sample and "physicians" 39%. In 1780 the proportions reverse to 4% and 96%. Cf. Mortimer, *Dying*: 72.

60. Margaret Pelling, "Occupational Diversity: Barbersurgeons and the Trades of Norwich, 1550-1640," *Bulletin of the History of Medicine* 56 (1982); D. B. Haycock and P. Wallis, "Quackery and Commerce in Seventeenth-Century London: The Proprietary Medicine Business of Anthony Daffy," *Medical History* supplement 25 (2005).

61. The count of practitioners is inexact because a number of debts are to multiple practitioners (e.g.: nurses, physicians); we count such plurals as two practitioners. Another 61 individuals had no occupational label and are excluded.

62. 526 of 793 (66%) of accounts with medical or nursing expenditure include at least one entry containing some details on what was supplied.

63. These cover 878 of 941 entries. The remaining clusters we observed in debt details appear less frequently: "visit" (28), "looking" (16), "watch" (9), "sit" (12), "assistance" (3), "care" (5), "prescribing" (9), and a further group of 25 "others," including miscellaneous charges for travel, coach hire, messengers, and lodging. The content and distribution are discussed in the appendix to the WORKING PAPER. We applied these categories inclusively. For example, the statement "for visiting and attending the said deceased and administering physick to him in the time of his sickness" (TNA PROB 5/4470) would be coded for "visit," "attending" and "physic."

64. Pelling, "Occupational Diversity." Specialisation persists if we break the sample into London and provincial accounts. Specialisation appears, perhaps, slightly stronger in London than elsewhere (only physicians offer advice in London, only surgeons supply surgery), but the numbers of observations for these categories are too small to make much of.

65. Mortimer, *Dying*: 78 (tab. 35). I focus here on the distribution where an occupation is assigned (he notes 60 without an occupation assigned). Mortimer's sample includes 218 physicians, doctors, surgeons and apothecaries.

66. It is not useful to replicate Mortimer's comparison of the sale of medicines or "physic and advice" (*Dying*: 80, table. 36) as that formulation only appears in 6 PCC probate account debts. However, if we took all instances of either physic or advice, apothecaries still dominate, supplying 85% of entries in the PCC accounts. By comparison, they supply 29% of medicines or "physic and advice" in the Kent accounts.

67. The remaining practitioners were: nurse, 17%; physician, 10%; surgeon 6%; attendant, 2%; unknown, 7% (n = 311). See Deneweth & Wallis, "Households, consumption."

68. This includes uncategorised medical practitioners as well as attendants, nurses, etc. If we restrict the estimate to the main grouped medical practitioners (apothecaries, physicians and surgeons), the figures are 1670, 1.9; 1730, 1.6; 1780, 1.4 (a decline of 25%). These figures are probably under-estimates because we count plural practitioners as two individuals.

69. Porter and Porter, *Patients Progress*: 79 (quote)

70. A. M. Sir Carr-Saunders, *The Professions* (London, 1964): 74; Loudon, *Medical Care*: 24-28.

71. Calculated from Mortimer, *Dying*: 69 (tab. 33). Mortimer reports the distribution of 417 practitioners named in accounts. The distribution we give in the text is for the 330 practitioners within these categories. It excludes other categories (n=22) and unknown (n=65). Mortimer's data differs slightly from those from the PCC samples. His is based on distinct individuals observed across his account sample. The PCC data reports the type of practitioner per deceased, and so may double-count a handful who appear in more than one account.

72. Surgeons were present in 21% of accounts with medical debts and a charge over £400 and 13% of comparable accounts with charges below £400.

73. Joan Lane, "The Medical Practitioners of Provincial England in 1783," *Medical History* 28 (1984). Digby, *Making a Medical Living: Doctors and Patients in the English Market for Medicine, 1720-1911*: 107-8; Loudon, *Medical Care*: 24-27.

74. We can trace 47 of the practitioners in the 1780s sample in the *Medical Register*. Of these, only two have a mismatch between occupational titles. Both are listed in the corporation of surgeons, but one is "Dr" the other is an apothecary in the accounts: Samuel Simmons, *The Medical Register for the Year 1783*, (London: printed for Joseph Johnson, 1783).

75. In 1780, the physicians' share is 20%.

76. Based on categorising practitioners into three groups: physicians, surgeons and apothecaries. The trend is robust to (1) including the minority of non-categorised practitioners. If we assumed that all non-categorised practitioners represented a further, different type of practitioner (to maximize the impact), the percentage of deceased using more than one practitioner falls from 49% to 23% from 1670 to 1780; and (2) to accounting for debts for drugs which don't have a practitioner associated with them in the records, as this only occurs rarely (5 accounts in total).

77. The sample sizes were London: 1670, 126; 1730, 131; 1780, 133. Provincial: 1670, 81; 1730, 51; 1780, 91 accounts.

78. Over the full period, 39% of the wealthiest half of testators reporting medical expenses used >1 type of practitioner (n=350) against 28% of the poorer half (n= 296). If we use Mortimer's categories, the share with >1 type of practitioner are 36% of category A deceased (n = 442), against 30% of categories B,C and D (n = 125). Both show similar shifts to using a single type of practitioner: among testators with charges over £400, the share falls from 58% to 26%; for testators with charges below £400, it fall from 39% to 22%.

79. The proportions are the share of items mentioning “attendance” or “visit” in each period for which a type of practitioner can be associated. See WORKING PAPER, table 4 for further details. In Kent, apothecaries were rarely recorded attending patients. There is no evidence in the PCC accounts that levels of attendance by practitioners differed by wealth of deceased, but this may reflect the wealth measure. Cf. Mortimer, *Dying*: 88-89.

80. Patrick Wallis, “Consumption, Retailing, and Medicine in Early-Modern London,” *Economic History Review* 61 (2008): 26-53. For earlier disputes on apothecaries’ practice, rooted in similar processes: “Plagues, Morality and the Place of Medicine in Early Modern England,” *English Historical Review* 121 (2006): 1-24; Cook, *Decline*; Loudon, *Medical Care*: 20-21.

81. Harold J. Cook, “The Rose Case Reconsidered: Physicians, Apothecaries and the Law in Augustan England,” *Journal of the History of Medicine* 45 (1990). Cf. Loudon, *Medical Care*; Digby, *Medical Living*, who both suggest this transition occurred later.

82. Geoffrey Holmes, *Augustan England: Professions, State and Society, 1680-1730* (London, 1982). Cf. Loudon, *Medical Care*. Wallis, “Competition and Cooperation.”

Mark S. R. Jenner and Patrick Wallis, *Medicine and the Market in England and Its Colonies, c.1450-c.1850* (Basingstoke, 2007).

84. E. Leong, “Making Medicines in the Early Modern Household,” *Bulletin of the History of Medicine* 82 (2008): 145-168; Elaine Leong and Sara Pennell, “Recipe Collections and the Currency of Medical Knowledge in the Early Modern ‘Medical Marketplace,’” in *Medicine and the Market in England and Its Colonies, c.1450-c.1850*, ed. Mark Jenner and Patrick Wallis (Basingstoke, 2007): 133-152.

85. Loudon, *Medical Care*; Holmes, *Augustan England*; Mortimer, *Dying*.