For nine weeks during the 1866 cholera epidemic, the registrar general for England and Wales published details of more than 13,000 deaths in London. Although the names of the deceased and the informant were withheld, all other information available from the death certificate was reproduced in the capital city’s Weekly Returns, including registration district and subdistrict, precise address (house number and street, or institution), sex, age (sometimes down to hours for infants), occupation, cause(s) of death, and duration of final illness. Since historians’ access to original death certificates in England and Wales is restricted, this source presents an opportunity to analyze systematically the practice of cause of death certification in the middle of the nineteenth century, albeit during a period of mortality crisis. Variability of diagnostic “depth”—that is, the listing of multiple causes and duration of final illness—is considered for three major causes: cholera, diarrhea, and respiratory tuberculosis. Deaths in workhouses and general hospitals were chronically underdocumented compared to home deaths. This finding supports the notion that the institutionalization of sickness in the nineteenth century was accompanied by a loss of the “patient narrative” and also points to the entrenchment of institutional cultures of record keeping and administration.

In Putting Science in Its Place, David N. Livingstone (2003: 62, 64) talks of hospitals as “spaces of diagnosis” that became the paramount sites of medical knowledge, practice, and education. During the nineteenth century the hospital was transformed from “a risky space occupied by the feckless and friendless who had no option but to place themselves under the care of strangers” into a place that “could promote itself as a scientific shrine with...
diagnostic laboratories and clinical technologies; and the wealthy willingly came for care.” Reasons for “the rise of the modern hospital in Britain” and elsewhere (Granshaw 1992) are many and complex. Most would agree, however, that their eventual preeminence owed as much to changing social and economic conditions—industrialization, urbanization, and increased social mobility—as to developments in medicine itself (Granshaw and Porter 1989; Sturdy and Cooter 1998; Bynum 2006).

A dominant clinical mode of hospital-based practice had emerged in Paris at the end of the eighteenth century and took concrete form across the Western world throughout the nineteenth century (Rosenberg 1979; Risse 1999). Such practice put power over the doctor-patient relationship unequivocally in the hands of physicians. Hospital medicine relied on the skills and tools of the doctor to diagnose, manage, treat, and if necessary, operate (Bynum 2006). Hospital medicine increasingly focused on specific parts of the body and generally reduced the clinical encounter to an impersonal routine examination (Foucault 1973; Waddington 1973; Stevens 2003: 26–31; Weisz 2006).

The workhouse infirmary (Brand 1965: chap. 5; Hodgkinson 1967), the dispensary (Loudon 1981), and the mental asylum stood alongside the modern hospital as important institutional diagnostic spaces. For rich and poor alike, the institutionalization of medicine demoted patients’ narrative role in the management of their own ill health (Jewson 1976; Porter 1985; Fissell 1991; Digby 1994: 236–40).

In London’s mixed and congested medical market, increasing numbers of patients were treated in institutions. By the mid-1890s six of the capital’s voluntary hospitals admitted more than 30,000 people every year, and more than half a million visits were made to outpatient departments (Rivett 1986: 140; Waddington 1998; Heaman 2003: 175). The institutionalization of sickness was mirrored by the institutionalization of mortality. In 1900 about one-third of all metropolitan deaths occurred in an institution, a proportion divided fairly evenly between hospitals and workhouses (Mooney et al. 1999). Despite this shift toward institutionalization, the vast majority of medical diagnoses were made in homes, and that is where most patients lived with their illnesses, even if they did enter an institution at some point (Jalland 1996; Lewis 2007).

Guenter B. Risse (2000: 178) has written that “cultural norms, contemporary scientific knowledge, and technological methods” shape diagnostic ability at any point in time. A study of causes of death taken from Mas-
sachusetts certificates in the late nineteenth and early twentieth centuries confirms that diagnoses were “limited by the historical context in which they were recorded” (Anderton and Hautaniemi Leonard 2004: 116). What about the role of space? Although Livingstone tends to use “spaces of diagnosis” to characterize the inexorable move toward institutionalized medical practice, he encourages us to reflect on the plurality of diagnostic space and how the content, delivery, and efficacy of health care depends in part on where it is carried out. Death certificates potentially offer some historical understanding about the relationship between place and medical diagnosis. The death certificate was introduced in England and Wales at the beginning of the Victorian period. Just like any other material artifact of healing culture, death certificates are embedded in the medical and social worlds from which they emerge (Alter and Carmichael 2000). George C. Alter and Ann G. Carmichael (1999: 130) have suggested that death certificates can tell historians a lot about the diffusion of medical ideas and the economics of medical practice. They are testament to contested notions of disease causation, shifting diagnostic practices, and the association between disease and demographic characteristics, social class, and stigma (Prior 1985; Bowker and Star 1999).

This article argues that death certificates also reveal that diagnostic practices were conditioned by the space in which health care was delivered.

There have been few opportunities to analyze a large number of individual death certificates from a historical perspective. Naomi Williams (1996) considered the information transcribed from 6,255 Sheffield death certificates for one year, 1870, using a copy of the civil death register made by the city’s Health Committee. Williams focused on how “problematic” causes of death, such as accident and violence, and “ambiguous” causes, such as old age and death in childbirth, were classified under the prevalent disease classification. Two further issues of historical and contemporary concern are diagnostic “accuracy” and diagnostic “depth.” A significant area of debate has been whether the details provided on the death certificate are a true record of the decedent and his or her condition. The perennial bugbear of accuracy applies most importantly to the cause of death itself but also to sociodemographic information routinely provided on death certificates, such as the age, sex, occupation, and address of the decedent (Cameron and McGoogan 1981; Prior 1985; Maudsley and Williams 1993; Prior and Bloor 1993: 365–66; Bowker and Star 1999: 53–161; Swift and West 2002; Mant et al. 2006). Diagnostic “depth,” by contrast, refers to the extent of
information provided, independent of accuracy (Laxton and Williams 1989). Physicians responsible for filling out a medical cause of death must decide whether to include supplemental data, such as qualifiers, additional causes, and the duration of final illness (Anderton and Hautaniemi Leonard 2004). This article is concerned with the last two of these. It shows that the amount of information about multiple causes and duration of final illness contained in the certificates of 13,688 deaths in London during the cholera epidemic of 1866 was strongly influenced by the place in which the death occurred. The lack of diagnostic depth for institutional deaths indicates that medical practices and the documentation of medical information differentiated by place were deeply entrenched by the mid-nineteenth century.

Cause of Death Certification and the 1866 Cholera Epidemic

The 1866 cholera epidemic was a watershed, so to speak, in British epidemiological history. It was the last major visitation of the disease following earlier outbreaks in 1832, 1848, and 1854 (Evans 1992: 151). In 1866 cholera was imported via sea from Egypt, resulting in 5,596 deaths in London and 14,378 in the country as a whole (Farr 1868).3 From the week ending June 2, 1866, the General Register Office (GRO) published the certificate details (minus the names of the deceased and the informant) of the London cholera deaths. Daily lists were made available by the printers to “scientific men” within 24 hours: the register of deaths for a Monday could be had by Tuesday evening. Over the next two months the trickle of victims swelled into a tide, and William Farr, compiler of abstracts at the GRO, described the 904 cholera deaths in the week ending July 28 as “alarming” (ibid.: 87). From the week ending August 11 to the week ending October 6, the daily list included all deaths. To the consternation of a Times leader writer, daily publication was then discontinued on the pretext that cholera deaths were declining (Times 1866). Public demand and a protest by the lord mayor of London on behalf of the Mansion House Relief Committee saw the resumption of the daily list on Monday, October 15, though reverting to publication of cholera and diarrhea deaths only (Anonymous 1866i, 1866j). This continued until Saturday, December 8, by which time the end of the epidemic had been confirmed (Farr 1868: 100). Although the process of publication entailed “much additional labour for the departmental staff” (ibid.: 99), it accorded with the registrar general’s policy during “plague seasons” to
keep the government, the scientific world, and the public accurately informed of the number of deaths by the epidemic and other diseases, week by week, or day by day, in each district, according to the urgency of the case... [showing] the extent of the danger; the place of the danger; and its progress. It shows the necessity of remedies; and traces their effects; but its great utility consists in the assistance it supplies, in conjunction with other knowledge, in the investigation of causes. (ibid.: 100)

Death certification laws and administrative procedures determined the information that went onto the certificate itself (Hardy 1994; Williams 1996; Higgs 2004). There is no need here to recount at great length how the certification of cause of death came to be included in the original Registration Act of 1836 (Robb-Smith 1968–69; Cullen 1974; Eyler 1979). The most recent and authoritative historical review suggests that ultimate responsibility rests with Edwin Chadwick, then secretary to the poor law commissioners (Higgs 2004). Although the 1836 act did not stipulate cause of death certification by a physician, the GRO secured it as often as possible (General Register Office 1843). An open certificate—that is, given by the medical attendant to the informant of the death, usually a family member or friend—formed the basis of the cause of death details recorded by the local registrar. The GRO provided physicians with blank certificates from 1845 and issued instructions on how to fill them out (General Register Office 1845; Barnes 1855: 216). Physicians were not paid a fee.4 Certificates of medical cause that were not completed by qualified medical practitioners were noted by the GRO as “not certified” (Eyler 1979: 53).

Concern about the extent and quality of medical certification was reflected in periodic analyses of the certificates (Hardy 1994: 475). Certification practices varied regionally and locally, a result of both the availability of physicians and the ability of the population to pay for medical attention at or about the time of death. For the first quarter of 1858, Farr calculated that in London 92 percent of deaths had a certificate from an attending physician (compared to 79 percent in the country as a whole). Five percent of metropolitan deaths were certified by the coroner; 1 percent did not have a cause certified, because there was no medical attendant; and 2 percent had no cause for unspecified reasons. The corresponding figures in England and Wales were 4, 6, and 11 percent (General Register Office 1860: 174, 212). “On the whole,” by 1858 the system of open certificates had “been attended with much success” (ibid.: 212).
According to Farr’s directions dating back to 1842, physicians were required to enter multiple causes of death under one another. In the printed versions of the daily lists that appeared in the GRO’s Weekly Returns during the 1866 epidemic, each distinct cause is separated by a comma (General Register Office 1866). It appears that and, with, or some other phrase of conjunction was used whenever a physician was unable to distinguish priority, such as “skin disease and diarrhoea” or “phthisis with hypertrophy of liver.” Doctors were supposed to list the diseases according to the sequence in which they appeared and not the order of their importance (Williams 1996: 60). Whether this stipulation was fully maintained during an epidemic crisis is difficult to tell, and the use of conjunctions demonstrates just how problematic this must have been in practice. To take one possible scenario: if a general practitioner had been attending a patient with phthisis for six months and that patient then died of cholera, how likely was the physician to certify the primary cause of death as phthisis?

Death Certificate Information

According to Farr’s “Report on the Cholera Epidemic of 1866 in England” (1868: 100), the daily number of cholera deaths in London peaked on July 31, 1866, the beginning of the end for the cholera epidemic in the capital. The database used for this study contains the information available for 13,688 deaths listed from the week ending August 11 to the week ending October 6, the period when details of all the deaths were printed. Age, sex, area (registration district and subdistrict), and place of death are available for certified deaths, as are occupations and causes. There were 2,177 listed occupations. Many occupational titles were not in fact distinct but the result of minor differences in description (e.g., “attendant on insane,” “attendant on the insane,” “attendant at lunatic asylum”) or detail provided (e.g., “artist in oil,” “artist in water colour”; “labourer in iron trade,” “labourer in iron yard,” “labourer in ironworks”). Occupations were assigned a five-digit code using the Historical International Standard Classification of Occupations (HISCO; van Leeuwen et al. 2002). These were transformed into social class using the HISCLASS extension of the HISCO scheme (Maas and van Leeuwen 2005).

Only 14 deaths, 0.1 percent of the total, were noted as having “no medical attendant.” The 2,235 transcribed causes of death are marginally inflated
by minor variations in spelling, such as “Asiatic cholera” and “Asyatic cholera.” Qualifiers (such as “acute” and “chronic”) and additional diseases not recorded separately, as a secondary cause of death (such as “atrophy of the liver and fatty degeneration of the heart”), also overstated the overall number of specific causes recorded in the database. In cases of the latter, it is probable that the physician could not distinguish priority between the two and failed to adhere to the GR0’s guidelines.

Three ailments are the focus here. Cholera and diarrhea are two obvious choices, and the third is respiratory tuberculosis, a leading cause of death in this period. There were 58 cholera-related causes of death, 67 diarrhea-related causes of death, and 55 causes of death associated with respiratory tuberculosis. These diseases — cholera (2,360 deaths), diarrhea (1,139), and respiratory tuberculosis (1,400) — accounted for 34 percent of all deaths in the database. In the analysis that follows, where there is ambiguity I have adopted Farr’s convention of classifying a death certified as “cholera diarrhoea” (plus variations such as “fever following chol. diarr.”) to cholera rather than to diarrhoea (Pelling 1978: 109). Fifteen cases of “English Cholera” were classified as cholera deaths, as were variations of “cholera infantum” (table 1). Qualifications for diarrhea were more common than for cholera (table 2). The nature of additional information varied for these two diseases, and qualifiers were used for a number of reasons, such as an indication of severity (“acute,” “chronic,” “malignant”), immediate cause (“accelerated by eating mussels”), associated cause (“exhaustion,” “dentition”), or some concept of time and stage of disease (“approaching,” “sudden,” “premonitory,” “from birth”). Respiratory tuberculosis statistics are notoriously unreliable (Szreter 1988; Bryder 1996; Woods and Shelton 1997; Woods 2000). The vague terms “phthisis” and “consumption” were known as appellations for a wide variety of respiratory ailments, particularly bronchitis (Guha 1994; Hardy 1994; Szreter 1994). They were also synonyms for wasting diseases that included not only respiratory tuberculosis but also probably internal cancers and leukemia (Hardy 1988: 392–93). The term “consumption” was used far less often in London than in the United States (Anderton and Hautaniemi Leonard 2004: 120–26). All primary causes of death that include the terms “phthisis” (or variants such as “phthisical”), “consumption,” “tubercular disease of the lung,” or “tuberculosis pulmonalis” are classed as respiratory tuberculosis (table 3).
Table 1  Cholera deaths, London, week ending August 1 to week ending October 6, 1866

<table>
<thead>
<tr>
<th>Certified cause</th>
<th>Number</th>
<th>Examples of qualifiers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cholera/cholerine</td>
<td>1,567</td>
<td>acute; approaching; aggravated; and consecutive fever; and exhaustion; autumnal;</td>
</tr>
<tr>
<td>Cholera, with qualifier</td>
<td>80</td>
<td>debility after; derangement of liver terminating in; epidemic; exhaustion after;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>maligna; malignant; morbus; second attack; serosa; spasmodica; sudden; supposed death from; supposed to be; (not known)</td>
</tr>
<tr>
<td>Cholera diarrhoea</td>
<td>351</td>
<td>acute diarrhoea approaching cholera; from birth; from neglected diarrhoea; fever following; severe</td>
</tr>
<tr>
<td>Cholera diarrhoea, with qualifier</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Asiatic cholera</td>
<td>324</td>
<td>accelerated by eating mussels; and suppressed measles; and typhus; exhaustion following; malignant; sudden</td>
</tr>
<tr>
<td>Asiatic cholera, with qualifier</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>English cholera</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Cholera infantum, infanta, infantile, infantilis</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2,360</td>
<td></td>
</tr>
</tbody>
</table>

Source: General Register Office 1866.

Patterns of Mortality in London, 1866

The sex and age distribution of deaths for the three main causes was markedly different (table 4). Compared to all deaths, cholera was concentrated in children (1–14 years) and adults (15–64 years). Diarrhea was dominated by deaths in infancy, though the significance of mortality from diarrhea in children aged 1–14 years should not be discounted (half of the 257 deaths in this age group were to one-year-olds). Respiratory tuberculosis deaths overwhelmingly occurred in adults, and more so for men than for women. The lower classes claimed an elevated proportion of cholera deaths (61.2 percent of cholera deaths, compared to 49.5 percent of all deaths) and had fewer deaths from respiratory tuberculosis than might be expected from the profile of all deaths. This may have been due to the competing cholera risk as much as any real difference—in other words, epidemic cholera struck disproportionately
among the unskilled class, killing those who might otherwise have died from respiratory tuberculosis. Another possible reason was that the upper and middle classes died slightly more often from respiratory tuberculosis than anticipated because of the enclosed working conditions experienced by office managers and white-collar workers (Woods and Williams 1995). The East End took the brunt of the cholera epidemic. Mortality rates in St. George in the East, Stepney, and Poplar exceeded those in the worst-hit provincial towns (Farr 1868: 18, 61). Although the East End contained only 20 percent of the capital’s population in 1866, 67 percent of London’s cholera and 35 percent of its diarrhea deaths were registered there.8

Institutions accounted for 18 percent of deaths, a figure that more or less corresponds with the annual totals for London in the third quarter of the nineteenth century (Mooney et al. 1999: 236–37). The percentage varied by the three causes covered here, since 73 percent of cholera deaths, 94 percent of diarrhea deaths, and 79 percent of respiratory tuberculosis deaths occurred at home. That 21 percent of respiratory tuberculosis deaths occurred in institutions can be explained by the fact that so many—more than half—were workhouse deaths. As for the rest, we already know that general voluntary hospitals habitually ignored their own rules on the exclusion of chronically ill tuberculous patients (Mooney et al. 1999). The relatively high percentage of institutional cholera deaths was skewed by the increased availability of hospital accommodation during the epidemic. General hospitals—particularly the London Hospital in the East End—appropriated wards for cholera patients (Farr 1868: 181, 184). While workhouses and their infirmaries took in some destitute cholera patients, temporary cholera hospitals (listed in table 4 as “cholera hospital”) were also opened by vestries, poor law unions,
Table 3  Respiratory tuberculosis deaths, London, week ending August 1 to week ending October 6, 1866

<table>
<thead>
<tr>
<th>Certified cause</th>
<th>Number</th>
<th>Examples of qualifiers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phthisis</td>
<td>1,046</td>
<td></td>
</tr>
<tr>
<td>Phthisis pulmonalis</td>
<td>201</td>
<td></td>
</tr>
<tr>
<td>Pulmonary phthisis</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Phthisis, with qualifier</td>
<td>47</td>
<td>acute; chronic; laryngeal; natural; and . . .</td>
</tr>
<tr>
<td>Consumption</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>Pulmonary consumption</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Consumption, with qualifier</td>
<td>3</td>
<td>chronic; tubular; with scrofulous tumor of neck</td>
</tr>
<tr>
<td>Other (including tubercular</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>disease of lungs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,400</td>
<td></td>
</tr>
</tbody>
</table>

Source: General Register Office 1866.

and charities (Anonymous 1866a: 206). This raised the number of beds available and increased the likelihood of dying away from home. If reports are to be believed, metropolitan medical officers of health and their sanitary staff visited the home of practically every case of cholera known to them and encouraged hospitalization (Farr 1868: 178–98). Other, nonmedical considerations raise the possibility that a diagnosis of cholera was overlooked in favor of diarrhea. Bill Luckin (1986: 106) points out the considerable political pressure in some London unions to downplay the existence of cholera in order to delay, if not obviate altogether, the costly implementation of emergency sanitary regulations. It was admitted, however, that the age profile of the workhouse population—which was skewed toward the very young and the very old—made a diagnosis of diarrhea more likely in these institutions than in general hospitals (Committee for Scientific Inquiries 1855: 63–64).

Of the 13,688 deaths, 9,752 (71 percent) had only one cause listed, 3,539 (26 percent) had two, 375 (3 percent) had three, and 22 (< 1 percent) had four. These are low levels of multiple-cause certifications compared to today (Mackenbach et al. 1997: 1071; Wall et al. 2005). Additional causes appeared on 333 (14 percent) of cholera certificates, 432 (38 percent) of diarrhea certificates, and 180 (13 percent) of respiratory tuberculosis certificates. The large figure for diarrhea reflects the plasticity of diagnosis for this complaint. Secondary causes on diarrhea certificates were dominated by cholera (117), con-
Table 4  Percentage distribution of deaths by cause registered in London, by covariate, week ending August 1 to week ending October 6, 1866

<table>
<thead>
<tr>
<th></th>
<th>Cholera</th>
<th>Diarrhoea</th>
<th>Respiratory tuberculosis</th>
<th>Other causes</th>
<th>All deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>2,362</td>
<td>1,139</td>
<td>1,400</td>
<td>8,787</td>
<td>13,688</td>
</tr>
</tbody>
</table>

**Demographic**

<table>
<thead>
<tr>
<th>Sex</th>
<th>Male</th>
<th>47.7</th>
<th>50.0</th>
<th>56.5</th>
<th>51.9</th>
<th>51.5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>52.4</td>
<td>50.0</td>
<td>43.5</td>
<td>48.1</td>
<td>48.5</td>
</tr>
<tr>
<td>Age</td>
<td>0</td>
<td>8.7</td>
<td>53.5</td>
<td>3.1</td>
<td>31.1</td>
<td>26.2</td>
</tr>
<tr>
<td></td>
<td>1-14</td>
<td>31.2</td>
<td>22.6</td>
<td>8.0</td>
<td>24.4</td>
<td>23.8</td>
</tr>
<tr>
<td></td>
<td>15-64</td>
<td>51.7</td>
<td>16.1</td>
<td>86.4</td>
<td>29.6</td>
<td>38.1</td>
</tr>
<tr>
<td></td>
<td>65+</td>
<td>8.4</td>
<td>7.8</td>
<td>2.5</td>
<td>14.9</td>
<td>11.9</td>
</tr>
<tr>
<td>Social class</td>
<td>Upper</td>
<td>4.9</td>
<td>9.7</td>
<td>12.9</td>
<td>13.5</td>
<td>11.6</td>
</tr>
<tr>
<td></td>
<td>Middle</td>
<td>34.0</td>
<td>39.6</td>
<td>41.1</td>
<td>39.7</td>
<td>38.9</td>
</tr>
<tr>
<td></td>
<td>Lower</td>
<td>61.2</td>
<td>50.8</td>
<td>46.1</td>
<td>46.7</td>
<td>49.5</td>
</tr>
</tbody>
</table>

**Location**

| Area             | East End | 67.0 | 35.6 | 18.6 | 23.1 | 31.3 |
|                 | Rest of London | 33.0 | 64.4 | 81.4 | 76.9 | 68.7 |
| Place            | Workhouse or infirmary | 7.5  | 3.0  | 12.5 | 8.1  | 8.0 |
|                 | General hospital | 11.1 | 1.6  | 3.1  | 5.1  | 5.6 |
|                 | Cholera hospital or ward | 6.7  | 0.9  | 0.0  | 0.0  | 1.2 |
|                 | Specialist hospital\(^b\) | 0.2  | 0.2  | 4.4  | 2.3  | 2.2 |
|                 | Other institution\(^c\) | 0.1  | 0.4  | 0.6  | 0.9  | 0.8 |
|                 | Unknown | 0.0  | 0.0  | 0.0  | 0.1  | 0.0 |
|                 | Home    | 73.4 | 93.9 | 79.4 | 83.4 | 82.2 |

**Certificate**

| Causes     | Single | 85.9 | 61.7 | 87.1 | 66.0 | 71.2 |
|           | Multiple | 14.1 | 38.3 | 12.9 | 34.0 | 28.8 |
| Duration  | Given | 59.4 | 52.4 | 36.1 | 31.5 | 38.5 |
|           | Not given | 40.6 | 47.6 | 63.9 | 68.5 | 61.5 |

Source: General Register Office 1866.

Notes: Cases where category is not specified or not classified are dropped from the analysis. Figures in each category do not always add up to 100 percent due to rounding.

\(^a\)See note 5 for the composition of social class categories.

\(^b\)Includes infectious disease hospitals, consumption hospitals, military hospitals, and other specialist hospitals.

\(^c\)Includes almshouses, asylums, orphanages, foundling homes, military barracks, and prisons.
vulsions (99), and exhaustion (77). It is interesting that so many mentions of cholera should appear as a secondary cause for diarrhea. In these instances it is probable that the certifier was placing diarrhea first as per the chronological ordering required by the GRO.9 The most common secondary causes for cholera were collapse (87), some form of fever (73)—such as “low fever,” “consecutive fever,” and “continuous fever”—exhaustion (41), and diarrhea (15). At 13 percent, the rate of respiratory tuberculosis certificates with a secondary cause is intriguingly low, given the historical ambiguity about the etiology of the disease (Worboys 2000: 193–233). But perhaps it is less surprising, given what one medical authority had to say at about this time. While identification of the disease was difficult in the incipient phase, “the symptoms and physical signs taken together render the diagnosis of confirmed phthisis easy” (Hooper and Guy 1858: 494). Exhaustion featured as a secondary cause on 24 respiratory tuberculosis certificates, as did hemoptysis (blood spitting, 27) and diarrhea (20).

Duration of the primary cause of death was provided for 5,277 deaths (38.5 percent). It was given for more cases of cholera and diarrhea than not, possibly because these illnesses were by nature short in duration and the person responsible for reporting the death might recall the date of onset of illness more readily.10 It is also not unreasonable to assume that, in the midst of a cholera epidemic, subdistrict registrars encouraged the informant to provide duration for these two diseases, knowing it would be used at the GRO to test ideas about the fatality of cholera (see below).

Determinants of Diagnostic Depth

Odds ratios demonstrate that age was an important determinant for recording multiple causes (table 5). This was especially the case for diarrhea. Compared to infant diarrheal deaths, adults were six times as likely to have an additional cause listed. This suggests two possibilities that were not mutually exclusive: either certifiers viewed infant diarrhea as a meaningful category, or they were not confident about ascribing diarrhea as a cause of death in older age groups without indicating a coexisting condition.11 The influence of class was not very strong for the three specific causes, but for the numerically large other causes and for all deaths, the upper class was significantly more likely to have multiple causes listed. With the exception of diarrhea, residence in the East End resulted in a slimmed-down death certificate, a result that was
highly significant for other causes and all deaths. It is interesting and somewhat counterintuitive that specialist hospitals had a propensity to include multiple causes. For example, of the 158 cholera deaths in cholera hospitals, 60 (38 percent) had further causes listed. This was more than triple the rate at which other cholera deaths in London were given additional causes (12 percent). Compared to home deaths, however, multiple-cause certificates were thin on the ground in workhouses and in general hospitals for all deaths—by a factor of 0.39 and 0.66, respectively.

According to Williams (1996: 60), certifiers were “encouraged” to provide the duration of final illness but not to guess at the “duration of the latent stages of diseases.” Farr was interested in this because he believed that for cholera duration of illness was inversely related to fatality: the shorter the illness, the more destructive the epidemic was likely to be. As table 6 shows, for cholera deaths duration was more likely to be given for females and less likely to be given for infants. For other causes and all deaths, the odds that a child’s certificate included duration were twice those of an infant’s. Class exerted no significant influence whatsoever, while East End residence indicated less chance that duration was recorded for the specified causes. In contrast with multiple causes, duration was not more likely to be given by specialist institutions on the whole. Most startling is the consistent and highly significant likelihood that duration was chronically underreported for workhouses and general hospitals.

Overall, diagnostic depth was shallowest for infants and for workhouse and hospital deaths. Institutional sketchiness is underlined in figure 1, which shows the percentage of death certificates containing multiple causes and duration by place of death. The gradients between the three types of place are striking; indeed, it could be said that figure 1 presents an apt visual accompaniment to the loss of the patient narrative caused by the institutionalization of medical practice.

Place of Death and Diagnostic Depth

Research into the determinants of where people die is an important aspect of health service planning (Polissar et al. 1987; Field et al. 1997; Cohen et al. 2006; Feudtner et al. 2007; Gomes and Higginson 2008). In some settings, for example, the evolution of palliative care for cancer sufferers has challenged the trend of increasing hospitalization (McCusker 1983; Moinpour...
<table>
<thead>
<tr>
<th>Sex</th>
<th>Cholera</th>
<th>Diarrhoea</th>
<th>Respiratory tuberculosis</th>
<th>Other causes</th>
<th>All deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Female</td>
<td>1.19 (0.93, 1.51)</td>
<td>0.85 (0.66, 1.10)</td>
<td>0.75 (0.54, 1.03)*</td>
<td>1.00 (0.92, 1.10)</td>
<td>0.99 (0.92, 1.07)</td>
</tr>
<tr>
<td>Age</td>
<td></td>
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<td></td>
<td></td>
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<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>1–14</td>
<td>0.77 (0.48, 1.25)</td>
<td>1.49 (1.08, 2.05)**</td>
<td>0.75 (0.29, 2.08)</td>
<td>1.43 (1.27, 1.61)***</td>
<td>1.17 (1.05, 1.30)***</td>
</tr>
<tr>
<td>15–64</td>
<td>1.51 (0.96, 2.36)*</td>
<td>6.14 (4.16, 9.06)***</td>
<td>0.78 (0.34, 1.79)</td>
<td>1.48 (1.31, 1.67)***</td>
<td>1.07 (0.97, 1.19)</td>
</tr>
<tr>
<td>65+</td>
<td>0.91 (0.49, 1.68)</td>
<td>3.44 (2.14, 5.54)***</td>
<td>0.95 (0.27, 3.34)</td>
<td>1.17 (1.01, 1.36)***</td>
<td>1.19 (1.04, 1.36)***</td>
</tr>
<tr>
<td>Class*</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Upper</td>
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<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Middle</td>
<td>1.27 (0.80, 2.01)</td>
<td>1.26 (0.84, 1.90)</td>
<td>1.16 (0.73, 1.87)</td>
<td>0.88 (0.78, 1.00)**</td>
<td>0.92 (0.83, 1.03)</td>
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<tr>
<td>Lower</td>
<td>0.97 (0.62, 1.52)</td>
<td>1.25 (0.84, 1.87)</td>
<td>0.95 (0.59, 1.54)</td>
<td>0.78 (0.68, 0.88)***</td>
<td>0.79 (0.71, 0.88)***</td>
</tr>
<tr>
<td>Area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rest of London</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>East End</td>
<td>0.83 (0.64, 1.08)</td>
<td>1.37 (1.05, 1.80)**</td>
<td>0.68 (0.43, 1.06)*</td>
<td>0.82 (0.74, 0.92)***</td>
<td>0.72 (0.66, 0.88)***</td>
</tr>
<tr>
<td>Place</td>
<td>Home</td>
<td>Workhouse</td>
<td>General hospital</td>
<td>Cholera hospital</td>
<td>Specialist hospital</td>
</tr>
<tr>
<td>-----------------</td>
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<td>-----------------</td>
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<tr>
<td></td>
<td>1.00</td>
<td>0.51 (0.28, 0.90)**</td>
<td>0.28 (0.12, 0.63)***</td>
<td>0.30 (0.14, 0.64)***</td>
<td>0.39 (0.32, 0.48)***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.12 (0.05, 0.28)***</td>
<td>0.13 (0.04, 0.44)***</td>
<td>1.14 (0.50, 2.63)</td>
<td>0.83 (0.67, 1.02)*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.79 (2.65, 5.44)***</td>
<td>2.76 (0.55, 13.91)</td>
<td>b</td>
<td>1.99 (0.12, 31.96)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.58 (0.60, 4.21)</td>
<td>0.86 (0.40, 1.87)</td>
<td>1.52 (1.15, 2.02)***</td>
<td>1.35 (1.06, 1.71)***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.18 (0.02, 1.87)</td>
<td>2.07 (0.41, 10.49)</td>
<td>1.11 (0.72, 1.72)</td>
<td>1.31 (0.87, 1.97)</td>
</tr>
<tr>
<td>Observations</td>
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<td>1,134</td>
<td>1,398</td>
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</tr>
<tr>
<td>Pseudo R²</td>
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<td>0.0857</td>
<td>0.0222</td>
<td>0.0185</td>
<td>0.0173</td>
</tr>
</tbody>
</table>

*See note 5 for the composition of social class categories.

*Variable dropped due to collinearity.

*Includes infectious disease hospitals, consumption hospitals, military hospitals, and other specialist hospitals.

*Variable dropped; values predict failure perfectly (2 observations not used).

*Includes almshouses, asylums, orphanages, foundling homes, military barracks, and prisons.

*Variable dropped; values predict failure perfectly (3 observations not used).

*p < .01. **p < .005. ***p < .001.
Table 6  Odds ratio effects (95% confidence interval) of selected characteristics on the presence of duration of final illness, London, week ending August 1 to week ending October 6, 1866

<table>
<thead>
<tr>
<th></th>
<th>Cholera</th>
<th>Diarrhoea</th>
<th>Respiratory tuberculosis</th>
<th>Other causes</th>
<th>All deaths</th>
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<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Female</td>
<td>1.22 (1.02, 1.45)**</td>
<td>1.08 (0.85, 1.38)</td>
<td>0.90 (0.71, 1.14)</td>
<td>0.95 (0.86, 1.04)</td>
<td>1.03 (0.96, 1.11)</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>1–14</td>
<td>1.49 (1.08, 2.06)**</td>
<td>1.24 (0.91, 1.68)</td>
<td>0.83 (0.40, 1.73)</td>
<td>2.19 (1.94, 2.48)***</td>
<td>1.95 (1.77, 2.16)***</td>
</tr>
<tr>
<td>15–64</td>
<td>1.96 (1.43, 2.69)***</td>
<td>1.77 (1.23, 2.56)***</td>
<td>0.99 (0.53, 1.85)</td>
<td>1.54 (1.36, 1.74)***</td>
<td>1.77 (1.61, 1.94)***</td>
</tr>
<tr>
<td>65+</td>
<td>2.10 (1.37, 3.23)***</td>
<td>1.21 (0.75, 1.94)</td>
<td>1.46 (0.56, 3.77)</td>
<td>1.09 (0.93, 1.29)</td>
<td>1.19 (1.04, 1.35)**</td>
</tr>
<tr>
<td>Class*</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Upper</td>
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<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Middle</td>
<td>0.98 (0.70, 1.38)</td>
<td>1.08 (0.75, 1.57)</td>
<td>0.83 (0.59, 1.17)</td>
<td>1.04 (0.91, 1.20)</td>
<td>1.04 (0.93, 1.16)</td>
</tr>
<tr>
<td>Lower</td>
<td>0.92 (0.67, 1.27)</td>
<td>0.96 (0.67, 1.38)</td>
<td>0.86 (0.61, 1.21)</td>
<td>0.97 (0.85, 1.11)</td>
<td>1.05 (0.94, 1.17)</td>
</tr>
<tr>
<td>Area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rest of London</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>East End</td>
<td>0.74 (0.61, 0.90)***</td>
<td>0.83 (0.64, 1.07)</td>
<td>0.91 (0.68, 1.22)</td>
<td>0.79 (0.71, 0.89)***</td>
<td>1.16 (1.07, 1.26)***</td>
</tr>
<tr>
<td>Place</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
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<tr>
<td>-----------------------------</td>
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<td>------</td>
</tr>
<tr>
<td>Home</td>
<td>0.20 (0.14, 0.28)**</td>
<td>0.10 (0.03, 0.29)**</td>
<td>0.09 (0.05, 0.17)**</td>
<td>0.09 (0.06, 0.13)**</td>
<td>0.13 (0.11, 0.17)**</td>
</tr>
<tr>
<td>Workhouse</td>
<td>0.10 (0.07, 0.14)**</td>
<td>0.04 (0.01, 0.29)**</td>
<td>b</td>
<td>0.21 (0.16, 0.29)**</td>
<td>0.18 (0.14, 0.22)**</td>
</tr>
<tr>
<td>General hospital</td>
<td>0.65 (0.46, 0.91)**</td>
<td>2.78 (0.58, 13.39)</td>
<td>c</td>
<td>2.02 (0.13, 32.43)</td>
<td>1.54 (1.12, 2.11)**</td>
</tr>
<tr>
<td>Cholera hospital</td>
<td>0.07 (0.03, 0.21)**</td>
<td>c</td>
<td>0.27 (0.14, 0.52)**</td>
<td>0.88 (0.66, 1.19)</td>
<td>0.53 (0.41, 0.68)**</td>
</tr>
<tr>
<td>Specialist hospital</td>
<td>0.70 (0.06, 7.91)</td>
<td>1.22 (0.20, 7.47)</td>
<td>0.43 (0.09, 2.14)</td>
<td>0.80 (0.50, 1.28)</td>
<td>0.60 (0.39, 0.91)**</td>
</tr>
<tr>
<td>Other institution</td>
<td>2,359</td>
<td>1,134</td>
<td>1,354</td>
<td>8,725</td>
<td>13,618</td>
</tr>
<tr>
<td>Observations</td>
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<td>0.0386</td>
<td>0.0668</td>
<td>0.0618</td>
<td>0.0607</td>
</tr>
</tbody>
</table>

*a* See note 5 for the composition of social class categories.

*b* Variable dropped; values predict failure perfectly (44 observations not used).

*c* Variable dropped due to collinearity.

*d* Includes infectious disease hospitals, consumption hospitals, military hospitals, and other specialist hospitals.

*e* Variable dropped; values predict failure perfectly (2 observations not used).

*f* Includes almshouses, asylums, orphanages, foundling homes, military barracks, and prisons.

**p < .005. ***p < .001.
Figure 1 Appearance of multiple causes and duration of final illness on London death certificates (%), week ending August 1 to week ending October 6, 1866

and Polissar 1989). Quite how the dynamics of different kinds of spaces—hospitals, hospices, homes—operate to produce variability in diagnostic and certification practices is underresearched (Dodier 1994). In his ethnographic study of death in the United States in the 1960s, David Sudnow (1967: 5) observed how different types of institution and place-specific traditions of medical practice conditioned physicians’ attitudes toward patients. Researchers exploring contemporary death certificates in the United States conclude that multiple causes on the death certificate are a proxy for the level of familiarity of the certifier with the patient. Thus hospital and nursing home deaths are more likely to have multiple causes listed. Deaths in the emergency room and at home—deaths that are often sudden—have fewer causes (Wall et al. 2005).

Broadly speaking, the association today between place and diagnostic depth is a reversal of the historical relationship. The chronic underrecording of details for institutional deaths was consistent in mid-nineteenth-century London. Clearly there was something particular about the institutional milieu that either drained diagnostic depth or imposed limitations on record-keeping practices or both. During the summer of 1866 the *Lancet* published
a weekly roundup of cholera cases in some of the metropolitan institutions. Resembling the characteristics of case histories routinely described in medical journals, the primary purpose of the *Lancet*’s weekly update was to apprise readers about the therapeutic effectiveness of various remedies, such as castor oil, calomel, dilute sulfuric acid, nitrous oxide, and opium. With a vast number of cholera admissions to choose from—586 of cholera and 279 of choleraic diarrhea into the London Hospital alone (Clark-Kennedy 1963: 47)—the *Lancet* veered toward the most interesting cases, whose particulars were furnished by the hospitals’ registrars and clerks if not seen by the *Lancet*’s correspondents themselves (Anonymous 1866e: 93).

These clinical vignettes reveal details about information-gathering practices that had a direct bearing on death certification. Staff at the London Hospital in the East End, as at other metropolitan institutions (Merrington 1976: 51), initially struggled to cope with the record-keeping demands occasioned by the influx of cholera patients, but by early August each physician had been provided with two clerks (Anonymous 1866c: 148; Anonymous 1866d: 121; Clark-Kennedy 1963: 41–48). It was difficult to obtain a preinstitutional illness and disease history from every patient; an observer at the London Hospital admitted that “a great difficulty attends the tracing of the origin of many cases” (Anonymous 1866c: 148). Nevertheless, patient details—including demographic data, illness histories, temperature charts, pulse readings, respirations, therapies, and outcomes—certainly were documented in situ for lots of cases (ibid.: 150). By matching 15 of the *Lancet* case histories to death certificates, it is possible to show that information extracted from patients and recorded on “cards” did not necessarily find its way onto death certificates. Eleven of the 15 matched histories unambiguously mention the length of illness before admission (usually associated with onset of diarrheal purges), but in only 4 of these 11 does “duration” appear on the death certificate. A 12th case was that of a 23-year-old cabman who died at St. Mary’s Hospital after being admitted “partially collapsed, but sensible.” While his death certificate says that the duration of illness was 19 hours, this in fact was the amount of time he spent in the hospital before he died (Anonymous 1866b: 184). The remaining three examples were particularly desperate, all being the “ill-fed and ill-lodged” young daughters of a Soho shoemaker. Each girl died of “cholera asiatica” in King’s College Hospital. The two younger siblings (aged five and seven years) presented with signs of advanced Bright’s disease, and the eldest (aged nine years) had mesenteric disease. None of these conditions were mentioned as secondary
causes on the death certificate, and neither the *Lancet* report nor the death certificates mentioned illness duration (Anonymous 1866f).

Yet it was a widely held opinion that the administration of general hospitals gave them a "higher character . . . as places of cure and as a means for scientific and practical clinical study" than workhouses (Watson 1867: 32). Cholera arrived in 1866 amid intense public debate about the adequacy and operation of the metropolitan workhouse system (Rogers 1889; Hodgkinson 1967: 451–574, 668–70; Flinn 1976: 63; Crowther 1982). The *Lancet* carried out an exceedingly critical survey of the workhouse infirmaries in 1865, and the Poor Law Board (PLB) dispatched its principal medical officer, Edward Smith, and an inspector, Harry Burrard Farnall, to investigate conditions in the spring of 1866. A further inquiry chaired by Thomas Watson, president of the Royal College of Physicians, assessed the specific question of overcrowding and attempted to establish standards about the amount of cubic space required for indoor paupers. Watson’s 1867 report was notable for its recommendation that sick paupers be treated in separate buildings, and this led to the creation of sick asylum districts for the establishment of joint poor law hospitals (Driver 1993: chap. 5; Green 1995: chap. 6). The background and consequences of these debates and reports have been dealt with extensively by historians, but the reports themselves provide some clues as to the diagnostic challenges faced by the poor law medical officers (PLMOs).

In a comparison of workhouse infirmaries and general hospitals, Francis Sibson lamented the lack of proper record keeping in the former. Discounting the books used to keep track of the medicines and dietary extras handed out to sick paupers, Sibson knew of only two registers that were maintained by metropolitan PLMOs for statistical reasons (Watson 1867: 36). The majority of metropolitan PLMOs worked single-handedly, sometimes, but by no means always, with the aid of an assistant and/or a dispenser. Invariably, they were responsible for the treatment of hundreds of patients who were either sick or in need of dietary supplement. The *Lancet* commissioners and the PLB inspectors documented the mountains of human illness the PLMOs were expected to climb. St. Leonard’s workhouse in Shoreditch had an estimated 300 patients “actually and acutely” suffering from an identifiable disease. However,

there are no prescription-cards over the beds. So that, under this system, the medical officer is supposed to recall to memory, as he passes the bed, the treatment which each patient has had, to make up his mind as to
variation, and then, after completing his rounds and on descending into the dispensary, to remember *en masse* all the changes which he desires to make, and forthwith to prepare the medicines. It is needless to comment on such a hopeless system. (Anonymous 1865: 132)

Also at St. Leonard’s, “a poor fellow lying very dangerously ill with gangrene of the leg had had no medicine for three days, because, as the male ‘nurse’ said, his mouth had been sore. The doctor had not been made acquainted either with the fact that the man’s mouth was sore or that he had not had the medicines ordered for him” (ibid.: 132–33). The trend toward paid nurses was apparent by the mid-1860s, but it is clear that many pressured PLMOs remained heavily reliant on untrained and poorly paid pauper nurses to bring patient illnesses to light (ibid.; Hodgkinson 1967: 475–76).

St. Leonard’s was not exceptional. Most PLMOs were supposed to see hundreds of indoor patients every day, and this restricted their ability to make proper diagnoses (Rogers 1889). One PLMO confided to a committee of the Association for the Improvement of the Metropolitan Workhouse Infirmaries that he was so overworked that he “never used the stethoscope in cases of chest disease, because it would take up too much time” (Anstie 1865–66: 482). Francis E. Anstie, one of the *Lancet*’s three commissioners, was convinced that this comment “must doubtless represent the true experience of many workhouse surgeons” (ibid.). Even when the PLMO was prevented from having a private practice, as at Lambeth, the remuneration was low (£300 per annum), and residence at the workhouse was not a requirement, something of a problem for attendance at emergencies. In the mid-1860s a PLMO was resident at only 3 of the 40 metropolitan workhouses (Farnall 1866). Two workhouses, one serving Lambeth parish and the other serving St. Margaret and St. John Westminster parishes, had diet and prescription cards that were regularly filled up, but they were in the minority (Anonymous 1866g). In the latter, the PLMO, Thomas Orme Dudfield, paid for the cards out of his own pocket (Anonymous 1866h).

To summarize the institutional situation, at least two factors caused a shortfall of information on death certificates. The first was that a heavy workload and the competing interest of private practice limited the time institutional physicians spent attending patients and compiling medical histories. This was accentuated during the epidemic crisis. While the natural course of cholera—rapid onset, rapid demise—doubtless precluded an expository relationship between the patient and the overworked workhouse or hospital
physician, some of the examples above indicate that this in itself is not a sufficient explanation for the lack of detail on institutional certificates (Anonymous 1866d: 121). Indeed, the massive underrecording of duration in institutional respiratory tuberculosis deaths (8.9 percent, compared to 43.2 percent for home deaths) suggests that the oversight was not confined to acute diseases. The average length of stay for phthisis inpatients at a voluntary general hospital around this time was 38 days (Greenfield 1875: 311).

A possible second reason is that institution-specific clerical practices influenced the transmission of information onto the certificate of medical cause of death. It was well known that the attitude toward and the quality of record keeping in the metropolitan hospitals were highly variable, and this probably applied to the filling out of death certificates as well (Howlett 1880). Duration of illness was particularly susceptible. Some hospitals routinely omitted mention of it, even if the period of time was known and could be counted in hours. For example, none of the 224 death certificates accredited to the London Hospital contained a reference to duration, regardless of cause. Although this was an extreme case, underrecording of duration in workhouses was also chronic. That there were institution-specific practices is also underlined by a detectable uniformity in disease nomenclature. At the London Hospital and most other general hospitals, the vast majority of cholera-related death certificates written between August 1 and October 6, 1866, were designated as straightforward “cholera.” However, all but 1 of the 25 cholera deaths at the Royal Free and King’s College hospitals were listed as “Asiatic cholera.” “Asiatic cholera” was also the default designation at Poplar Union’s North Street Infirmary, whereas at other workhouses “cholera” was preferred. Moreover, private practitioners and hospital physicians were thought to certify cholera differently, with the former predisposed to ascribe a cholera death to the less pejorative diarrhea.

Certainly other causes of death—particularly tuberculosis and venereal disease—were subject to certification bias due to sensitivity of the family and social stigma (Bryder 1996). For hospital doctors, pathological rigor supposedly held sway over any feeling of sentiment toward the family of the deceased (Committee for Scientific Inquiries 1855: 63–64; Luckin 1986: 106). All 33 deaths occurring at the Brompton Consumption Hospital were ascribed to “phthisis.” Regularity such as this is unsurprising where institutional medical practice was single-handed or was the responsibility of a small number of doctors, such as workhouses and some of the minor hospitals. Yet
even in hospitals where there was a sizable and diverse medical staff, it seems that diagnostic uniformity was driven by a cohesive and dominant attitude toward the naming of particular diseases.

It must be remembered that practitioners operating in the domestic setting needed only to have attended the final illness to certify it. Indeed, such attendance perhaps was the one and only time the doctor laid eyes on the patient. One should justifiably be wary of whether the physician in fact treated the patient at all in the final illness. Yet for patients dying at home, the attending physician was probably more familiar with the story of that patient’s illness, or illnesses, than with a patient dying in a hospital. In some cases the general practitioner need not have asked the deceased’s occupation, marital status, or other details, so familiar was he with the patient’s personal circumstances. This scenario is more plausible for a small town or rural doctor than a general practitioner in a bustling metropolis. Still, the more frequent inclusion of sociodemographic information, additional causes of death, and duration of final illness for metropolitan home deaths indicates that whatever remained of the patient narrative in the mid-nineteenth century could be more readily heard in domestic settings as opposed to institutional ones.19

Conclusion

This article has used the information taken from more than 13,000 Londoners’ death certificates in a nine-week period in 1866 to show that there were important variations in the comprehensiveness of death certification. Differences in diagnostic depth depended partly on sociodemographic characteristics and area of residence within the city, but the immediate spatial context of the death was overwhelmingly vital. Institutional practices militated against diagnostic thoroughness and diligent record keeping. Today some physicians regard death certification as a procedural legal chore rather than as a task that has clinical and epidemiological worth (Prior 1985: 173; Prior and Bloor 1993: 367–68). Perhaps mid-Victorian institutional physicians viewed it in a similarly dismissive light. For hospital physicians in particular, other “documentary technologies” (Jacyna 2006: 61), such as written medical notes and graphical renditions of temperature and urine readings, were fundamental to their daily routine in ways that the death certificate was not. More questionable is the extent to which the availability of medical technologies and
instruments—the thermometer and postmortem, for instance—contributed
to diagnostic reductionism and therefore the appearance of fewer multiple
causes on the death certificate. Family physicians were more likely to per-
sist with the long-standing traditions of private practice, which consisted of
“a whole-person, symptomatic approach that was empirically rather than
theoretically based” and where the patient’s physique and environmental
factors made for a “unique response to individual circumstances” (Digby
1994: 79–80). It appears that this holistic style continued when the patient
was no longer alive, reflected in a relatively well-documented send-off for a
person dying at home.

Some fascinating questions remain. One dilemma relates to the inter-
pretation of long-term epidemiological trends. One modern study has
argued that “mentions” of a particular disease anywhere on a death certifi-
cate (and not just as an underlying cause) should be used to evaluate the
reliability of published mortality statistics (Goldacre et al. 2003). Because
diagnostic depth varied between spaces, the increasing domination of hospi-
tals and workhouses in the delivery of medical care from the mid-nineteenth
century must have had an influence on the recorded levels and trends of
cause-specific mortality, particularly in societies replete with medical insti-
have observed that disease classification systems “confound underlying mor-
tality trends.” So too does the spatial context of medical practice, and more
research is needed to understand precisely how, both now and in the past.

A second issue is that the source material used in this study does not
reveal the physician’s identity. Terminologies appearing on certificates might
vary in light of a doctor’s education, qualifications, and other characteristics,
such as age and length of time in practice. But there was a complex inter-
play between diagnostic spaces and the medical practitioners working inside
them. Maybe a general practitioner without public appointments never did
step inside a hospital after qualification; maybe he did skirt the walls of the
poor law infirmary on his way to a home visit. However, doctors employed
in general and specialist hospitals and workhouse infirmaries moved among
multiple diagnostic spaces. In publishing a register of diseases that had
occurred in two London hospitals in August 1855, Robert Barnes (1855: 211)
made the point that knowledge “of the prevalent diseases had led me to the
right apprehension of diseases than which nothing could be more special or
isolated in their origin to the ordinary observer.”22 There are numerous case
histories described in medical journals in which epidemiological conditions beyond the hospital walls contributed to a physician's diagnosis (Coupland 1880a, 1880b). In one vivid example from 1863, a 20-year-old tailoress was diagnosed with acute rheumatism at Charing Cross Hospital's outpatient department. Not until one of the hospital's senior physicians, a Doctor Willshire, made a domestic visit—where "the narrow and densely populated street at the back of the hospital" was infused with "a strong smell of chloride of lime"—was it clear that the pains of her joints "meant something else more dangerous to the patient." The local sanitary authority had ordered the use of the cleansing agent in the courts because typhus was "prevailing" in the surrounding streets. The diagnosis was revised (Willshire 1863: 36).

Hospital physicians saw patients in the clinic, sometimes they called on outpatients at home, and they were granted access to the domestic spaces of their private clientele. Some PLMOs administered to the indoor poor in the morning and trudged through the streets to visit their private patients in the afternoon. It is difficult to gauge the full extent of such transience and how it changed during the nineteenth century, but it certainly makes the vivid entrenchment of institutional diagnostic practice shown in figure 1 all the more intriguing. It also indicates that the stability, makeup, and meaning of various categories usually taken for granted—PLMO, hospital physician, and general practitioner; workhouse, hospital, and home—need careful consideration when medical practice in the Victorian period is assessed.

Notes

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1 Livingstone (2003: 66) asks his reader to "bear in mind that a century ago accident victims were not brought to a hospital at all." In 1861, however, London's hospitals witnessed 346 deaths from fractures and contusions, many of them caused by accidents (Mooney et al. 1999: 243). See also Granshaw 1981: 68.

2 For a study that links the death certificates of 167 members of the Steam Engine Makers' Society in the mid-nineteenth century, see Southall and Garrett 1991.

3 More than a decade after John Snow's (1849) pioneering publication, the 1866 epi-
demic "proved decisive in establishing the water-borne theory for cholera" (Eyler 1979: 119; see also Pelling 1978: 203–49; Davey Smith 2002). The East London Water Company’s defective water supply was fingered as the chief culprit of the severity of the outbreak in the eastern districts of the capital (Luckin 1986: 69–99). Other commentators expressed a wide range of opinions about the causes of the epidemic that implicated a more extensive set of factors, including poverty and the hygienic behaviors of the victims themselves (Luckin 1977; Hardy 1993).

4 This continued to be a bone of contention throughout the nineteenth century, particularly when payment to physicians for infectious disease notification certificates was introduced in the late 1880s (Foster 1893).

5 Social class could not be assigned to 778 deaths, mainly because the occupation field was blank in 706 cases. In some instances it was explicitly stated that the occupation was “unknown” (45 deaths) or that “no occupation” was given (1 death). For other deaths, either classification was not made under HISCLASS (e.g., students where the occupation of the father was not known), or the occupational title was too vague to assign a five-digit HISCO code. HISCLASS categories are (1) higher managers; (2) higher professionals; (3) lower managers; (4) lower professionals; (5) clerical and sales professionals; (6) foremen; (7) skilled workers; (8) farmers and fishermen; (9) lower-skilled workers; (10) lower-skilled farmworkers; (11) unskilled workers; and (12) unskilled farmworkers (Maas and van Leeuwen 2005: 280–82). For this article a further aggregation was made into upper class (classes 1–4 above), middle class (5–8), and lower class (9–12).

6 Though not impossible, 0.1 percent seems on the low side, given the figure of 1.0 percent in London calculated by Farr that was mentioned above. All of these deaths were ascribed a cause, six of them to convulsions.

7 Perhaps some variations were introduced in the transcription or printing stages of the Weekly Returns.

8 The East End contains seven registration districts (the 1866 annual cholera mortality per 10,000 population appears in parentheses): Shoreditch (11), Bethnal Green (63), Whitechapel (76), St. George in the East (97), Stepney (116), Mile End Old Town (64), and Poplar (89).

9 The Committee for Scientific Inquiries (1855) advised that the supposed stages leading to cholera technically meant that cholera cases should not have been associated with diarrhea at all, since once cholera was manifest, it became a disease distinct from diarrhea. Despite Farr’s role on that committee, it would seem that the committee’s recommendations and the GRO regulations were at odds with one another here.

10 Duration was also provided for 1,522 secondary causes (the same rate as for primary causes), not analyzed here.

11 In Sheffield in 1871, 25 percent of 345 infant diarrheal deaths were ascribed a secondary cause, slightly above 23 percent for all infant deaths (calculated from Laxton and Williams 1989: 122).

12 Though national and even intranational practices vary, physicians today are directed
by World Health Organization pro forma and International Classification of Diseases guidelines to provide an "underlying" cause of death (equivalent to the term primary cause in this article), plus any "immediate" causes and other significant conditions that contributed to the death.

13 The potential of case notes, admissions registers, and other patient records has been recognized and used by medical historians (Risse and Warner 1992).

14 On July 28 the Lancet listed four physicians, a resident medical officer and his assistant, and three officers appointed to help with the "arduous task" (Anonymous 1866e: 93). Debate about overworked hospital doctors continued into the twentieth century (Waddington 1998: 35–36).

15 Lindsay P. Granshaw (1981: 305) notes for St. Thomas's Hospital that senior physicians and surgeons were "theoretically responsible" for recording medical histories and treatment but that junior staff usually performed these duties.

16 Matches were made on sex, age, occupation, and address.

17 Anstie was at the Westminster Hospital and went on to edit the Practitioner. The other commissioners were Ernest Hart (who became editor of the British Medical Journal in 1867) and a Doctor Carr of Blackheath (Hodgkinson 1967: 471).

18 Dudfield was also district medical officer for the outdoor poor of Knightsbridge (Anonymous 1866h). Dudfield's situation was uncommon by this stage, since division of the functions of poor law district and workhouse medical officers "was one of the most pronounced developments" of the early Victorian period (Hodgkinson 1967: 349, 399–410; Flinn 1976: 49–50). For more on Dudfield, see Tanner 1998.

19 The relative dearth of detail on workhouse and general hospital death certificates was not simply a reflection of the class bias of institutional patients. The recording of duration in institutions was exactly the same for the upper and middle classes as it was for the lower classes, while a small difference for multiple causes was not statistically significant. Although there were no class distinctions in the recording of duration in the domestic environment, members of the upper and middle classes who died at home were more likely to have multiple causes certified. While the difference was fairly small (32.4 percent for the upper and middle classes and 27.7 percent for the lower classes), it was nevertheless statistically significant. Further exploration of social class variations and causes of death is the subject of a separate article in preparation.

20 By the 1866 epidemic, in hospitals at least, the intensity of the collapse in cholera cases was gauged with the aid of a thermometer, a practice that was "unknown" in 1854 (Anonymous 1866d: 121). On the early use of the thermometer, see Hess 2005. More research is needed on the routine performance of postmortems in hospitals to determine cause of death. At St. Thomas's Hospital in the 1850s a postmortem was by no means automatic, physicians differed greatly in their predilection for the procedure, and in any case the hospital's museum curator carried out most of them (Granshaw 1981: 285–86). Included in the 15 matched case histories discussed in this article was the death of the 34-year-old wife of a policeman at Guy's Hospital (Anonymous 1866a: 205). The postmortem revealed a second cause of death as
nephritis, while abscesses visible on her arms provided a third cause, pyemia (a type of septicemia). In this instance, the postmortem increased the number of causes listed on the death certificate.

Though the medical attendant was expected to sign the death certificate, his or her identity appeared on the certificate only if he or she was the informant.

Barnes became a celebrated obstetrician (see Moscucci 2004). One physician’s reflections on the different ailments of his hospital and private patients in the late eighteenth century is in Blane 1813.

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