
Infant mortality in London, 1538–1850: a methodological study

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Abstract

A review of evidence on infant mortality derived from the London bills of mortality and parish registers indicates that there were major registration problems throughout the whole of the parish register period. One way of addressing these problems is to carry out reconstitution studies of individual London parishes, but there are a number of problems with reconstitution methodology, including the traffic in corpses between parishes both inside and outside of London and the negligence of clergymen in registering both baptisms and burials. In this paper the triangulation of sources has been employed to measure the adequacy of burial registration, including the comparison of data from bills of mortality, parish registers and probate returns, as well as the use of the same-name technique. This research indicates that between 20 and 40 per cent of burials went unregistered in London during the parish register period.

Introduction

In a recent edition of *Local Population Studies*, Jeremy Boulton and Leonard Schwarz have carried out a detailed analysis of the reliability of the London's bills of mortality.¹ They have demonstrated that there was a significant amount of 'traffic in corpses' between London parishes, and some movement of corpses to parishes outside London. They conclude that the bills 'remain tolerably accurate in the aggregate',² a conclusion similar to that of a number of other scholars who have recently worked with the bills.³ However, there is uncertainty about this conclusion, given the number of reasons for the unreliability of the bills, which may be listed as follows:

- The existence of Dissenters and Roman Catholics who both baptised independently and in some instances established their own burial grounds.
- The exclusion of a number of Anglican burial grounds within London from the defined area of the bills of mortality.

1 J. Boulton and L. Schwarz, 'Yet another inquiry into the trustworthiness of the eighteenth-century London's bills of mortality', *Local Population Studies*, 85 (2010), 28–45.

2 Boulton and Schwarz, 'Yet another inquiry', 28.

3 L. Schwarz, *London in the age of industrialisation* (Cambridge, 1992); J. Landers, *Death and the metropolis: studies in the demographic history of London* (Cambridge, 1993); R. Woods, 'Mortality in eighteenth century London: a new look at the bills', *Local Population Studies*, 99 (2006), 12–23.

- The movement of corpses from London to parish burial grounds outside of London.
- The neglect of baptism on religious or economic grounds, which in turn sometimes led to the non-registration of burials.
- The negligence of clergymen and parish clerks in compiling accurate statistics of baptisms and burials, both in parish registration and the submission of figures to the Company of Parish Clerks.⁴

Ogle concluded in his review of the bills in 1892 that it was necessary to add between 39 and 44 per cent to the recorded burials in the eighteenth century to reach a reliable estimate of the number of deaths, a proportion which he believed should be significantly increased for the nineteenth century.⁵ There is evidence from a number of sources to confirm Ogle's doubts about the reliability of the bills.

The bills of mortality and London burial registers

There is considerable confusion about the way the bills of mortality were compiled and the relationship between the bills and parish burial registers. In order to clarify this issue, it is necessary to understand how the bills were organised. Graunt described how

When any one dies [in London], then, either by tolling, or ringing of a bell, or by bespeaking of a grave of the sexton, the same is known to the searchers, corresponding with the said *Sexton*. The *Searchers* hereupon (who are ancient matrons, sworn to their office) repair to the place where the dead Corps lies, and by view of the same, and by other enquiries, they examine by what *Disease* or *Casualty* the Corps died. Hereupon they make their report to the *Parish Clerk*, and he, every *Tuesday* night, carries in an *Accompt* of all the *Burials* and *Christenings* happening that week, to the *Clerk* of the *Hall*. On *Wednesday* the general *Accompt* is made up and printed, and on *Thursday* published ...⁶

The returns made to the Company of Parish Clerks were based on the searchers reports, which appear to have included all deaths that occurred within individual parishes. Reginald Adams, the historian of the London Parish Clerks, described how the bills were compiled as follows:

4 T. Birch ed., *A collection of the yearly bills of mortality from 1657 to 1758 inclusive* (London, 1759), 4–6; W. Black, *Observations medical and political* (London, 1781), 269–71; G.M. Burrows, *Strictures on the uses and defects of parish registers and bills of mortality* (London, 1818), 44–5; J. Angus, 'Old and new bills of mortality: movement of the population: deaths and fatal disease during the last fourteen years, 1840–54', *Journal of the Royal Statistical Society* 17 (1854), 118–19; W. Ogle, 'An inquiry into the trustworthiness of the old bills of mortality', *Journal of the Statistical Society*, 55 (1892), 437–51.

5 Ogle, 'An inquiry', 451.

6 J. Graunt, *Natural and political observations upon the bills of mortality* (London, 1676), 7–8.

The basis of the collection was the return made out by each parish clerk by Wednesday for each week ... The return contained information the clerk received about the causes of deaths from 'searchers' ... When told by a sexton of a death, they [the searchers] had to visit the family and find out the cause of death ... These women were required to place their reports, from which the information was subsequently abstracted by the clerks, in a box on the staircase in the Company's Hall.⁷

Individual searchers' reports have survived and have been deposited in the Guildhall Library. Some are just notes on scraps of paper, others are on a brief printed form with the signature of a searcher authenticating the contents of the report.⁸ Not all reported deaths were included however in the bills of mortality, and Black wrote in 1781 that

The law ordains, that every person, of whatever sect, who dies in London or the suburbs, is to be inspected by the two parish searchers, and reported to the parish clerk, who then grants his certificate for the internment: this was originally intended to detect the plague and concealed murders ... Notwithstanding this ceremony of inspection by the searchers, and of making their reports to the parish clerk, it does not hence follow, that the clerk makes the return of death to the general hall, *unless the corpse is buried in his own ground, or parochial church-yard*. If the corpse is carried to any dissenting ground, and to various other places of sepulture not within the bills, the death and disease is so much waste paper, and is never heard of amongst the burials. Again, if the corpse is carried to a different parish, together with a certificate, then if such burying ground is within the bills, the death and disease is returned to the hall by the clerk of that parish, where the corpse is interred.⁹

Officially, no outside burial of a person dying within the bills of mortality should have taken place within an Anglican burial ground without a certificate issued by a parish clerk,¹⁰ but this was not always the case. For example, in the parish of St Anne, Soho, there were many imported burials which were not returned to the Company of Parish Clerks,¹¹ presumably either lacking or ignoring the certificates that accompanied them. Boulton and Schwarz have concluded 'that Soho's "clandestine" [unregistered] burials occasionally accounted for one in twenty of all dead Londoners reported in the bills.'¹²

The ambiguity in the bills of mortality registration process led to confusion and contradictory returns of the number of burials. Ogle in his 1892 study of the bills concluded that

7 R.H. Adams, *The parish clerks of London* (London, 1971), 54.

8 'Searchers' and parish clerks' certificates', Reference MS02185, Guildhall Manuscript Library.

9 W. Black, *Observations*, 269, 270.

10 Boulton and Schwarz, 'Yet another inquiry', 36.

11 Boulton and Schwarz, 'Yet another inquiry', 40, 41.

12 Boulton and Schwarz, 'Yet another inquiry', 43.

... the number of burials as given in the register is frequently in excess of the number given in the annual bill, and still more frequently falls short of it ... very often the searcher must have been trusted to return ... the number of burials; and that such return sometimes, included deaths of persons who were afterwards not buried in the parish graveyard, and more frequently omitted persons who were so buried, but concerning which the searcher received no information ... Out of one hundred and twenty comparisons made by me between the annual return in the bills and the entries in a parish register, there were only twenty occasions, that is once in six times, in which the bill and register gave the same number. In the remaining hundred instances there was a discrepancy, and sometimes a very large one ...¹³

This suggests that the bills of mortality and burial registers were at least partly independent of each other. This is confirmed by returns of burials for individual parishes in the bills even after they ceased to function as separate parishes. For example, the burial ground of Allhallows Honey Lane was closed in 1666 as a result of the destruction of the church by fire in that year, and it was united with St Mary le Bow in 1670 and absorbed into the burial register of that parish.¹⁴ Nevertheless, some returns of burials were made for Allhallows in the bills of mortality for 1670 and between 1699 and 1719,¹⁵ even though no people were being buried in the parish at those dates. Presumably the returns in the bills were of people dying in the parish, but buried elsewhere, suggesting that the searchers concentrated on deaths rather than burials.

Part of the confusion over burial registration is terminological. The London parish clerks were not responsible for the compilation of parish registers, which was officially the duty of the clergy of the parish.¹⁶ However, in some instances parish clerks did compile the parish register—although they appear to have received an extra fee for this work¹⁷—and clergymen sometimes made returns of ‘searched’ burials to the Company of Parish Clerks, even though they were not subject to the authority of that body.¹⁸ The dual process of registration may explain why in one parish the number of deaths reported in the bills of mortality for the year 1764 was 348, whereas the number of burials in the parish register for the same year was 1,442.¹⁹

13 W. Ogle, ‘An inquiry’, 441, 443.

14 *The Register of St. Mary le Bow Cheapside, All Hallows Lane and of St. Pancras, Soper Lane* Harleian Society, 44 (1914), 281.

15 Birch, *A collection*.

16 Adams, *Parish clerks*, 51; Boulton and Schwarz, ‘Yet another inquiry’, 43, 44.

17 Boulton and Schwarz, ‘Yet another inquiry’, 51.

18 Boulton and Schwarz, ‘Yet another inquiry’, 43–4.

19 Boulton and Schwarz, ‘Yet another inquiry’, 43–4.

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Table 1 Number of burials in six London parishes from 13 December 1743 to 11 December 1753²⁰

Parish	Register	Bills	Proportion of register to bills (%)
St Peter's, Cornhill	158	168	94.0
St Michael's, Cornhill	172	161	106.8
St Thomas Apostle	114	99	115.2
St Sionis, Backchurch	310	268	115.7
St Mary, Aldermary	164	194	84.5
St John Baptist, Wallbrook	179	202	88.6

Table 2 Number of burials listed in parish registers and the bills of mortality of Clerkenwell and All Hallows Honey Lane, St Pancras Soper Lane & St Mary Le Bow (Cheapside parishes), 1657–1753²¹

Period	St James Clerkenwell			Cheapside Parishes		
	Number of burials in bills	Number of burials in register	Proportion of bills/register burials (%)	Number of burials in bills	Number of burials in register	Proportion of bills/register burials (%)
1657–59	1,046	1,033	101.3	126	83	151.8
1660–69*	4,878	3,906	124.9	336	250	134.4
1670–79	3,671	3,109	118.1	307	294	104.4
1680–89	3,857	3,596	107.3	368	364	101.1
1690–99	3,722	3,653	101.9	320	316	101.3
1700–09	3,598	2,177	165.3	348	365	95.3
1710–19	4,550	4,411	103.2	353	347	101.7
1720–29	5,305	5,894	90.0	–	–	–
1730–39	5,248	5,673	92.5	–	–	–
1740–49	5,512	6,020	91.6	–	–	–
1750–53	1,916	2,080	92.1	–	–	–

Note: *The period covered for the Cheapside parishes is 1660–66 & 1669.

The partial independence of the bills of mortality and parish registers allows an assessment of the quality of both sources. Ogle published a number of figures for individual parishes, and the largest samples were for six parishes for the decade 1743–1753.

There was considerable variation between the different parishes, suggesting that registration problems varied significantly at this time. It is instructive to carry out a similar

²⁰ Ogle, 'An inquiry', 445.

²¹ The number of burials in the bills of mortality are taken from Birch, *A collection*. The number of parish register burials are derived from the 'People in Place' dataset deposited in the UK Data Archive (Study Number UKDA-5791).

exercise for a much more extended period of time, and the 'People in Place' project has created an archive of demographic material for a number of London parishes which allows such an analysis. Table 2 above summarises data on St James Clerkenwell—the main parish in the dataset—and the three linked city parishes—All Hallows Honey Lane, St Pancras Soper Lane and St Mary le Bow in the Cheapside Ward.

There were major differences in the bills/register ratios over time in both Clerkenwell and the Cheapside parishes. For example, the bills/register ratio in Clerkenwell for the decade 1700–09 was nearly double of that in 1720–29, suggesting that parish registration improved significantly in the period. Table 2 indicates that there were major registration problems in some London parishes in the seventeenth and eighteenth centuries, a conclusion which will be further evaluated later in this paper.

Reconstitution methodology

Given the problems with the bills of mortality, a number of scholars have turned to reconstitution techniques to construct more reliable demographic statistics in the parish register period. However, reconstitution research itself is subject to significant difficulties, which may be summarized and discussed under the following headings:

- The burial of corpses in neighbouring parishes and elsewhere.
- Population mobility into and out of London parishes.
- The deaths of young infants before the date of baptism.
- The under-registration of births and deaths in parish registers.

The burial of corpses in neighbouring parishes and elsewhere

The practice of the moving corpses into other parishes appears to have varied significantly by place. Relatively low proportions of the 'traffic in corpses' appear to have occurred in some London parishes. Only 1.3 per cent of individuals dying in St Helen's Bishopsgate were carried out for burial in other parishes in the period 1640–58,²² and 3.2 per cent of 188 burials in Aldersgate in 1696–7 were imported from outside.²³ Boulton and Schwarz have discovered a much greater proportion of the movement of corpses in the parish of St Martin in the Fields, indicating that for most of the period between 1748 and 1824 the proportion of imported burials was about 10 per cent, but with peaks above 10 per cent in 1763–78 and 1818–23.²⁴ They have also presented evidence to show that the parish of St

22 V. Harding, *The dead and the living* (Cambridge, 2002), 57.

23 J. Boulton, 'The marriage duty act and parochial registration in London, 1695–1706', in K. Schürer and T. Arkell eds, *Surveying the people* (Oxford, 1992), 249, fn. 83

24 Boulton and Schwarz, 'Yet another inquiry', 38.

Table 3 Patterns of residence in London burial registers²⁵

Parish	Date	Number of children	Proportion of non-resident children (%)	Number of adults	Proportion of non-resident adults (%)
St Sepulchre Holborn	1736	100	0	100	2
St Botolph Aldgate	1736	100	0	100	2
St Dionis Backchurch	1736–1746	100	0	100	12
St Michael Cornhill	1736–1753	100	2	100	12
St James Clerkenwell	1736	100	5	100	3
St Dunstan in the West	1736	100	13	100	9
St George Bloomsbury	1736	100	13	100	17
St Paul Covent Garden	1736	100	33	100	47

Anne’s, Soho, attracted a large number of imports through the cheapness of its burials, with between 60 and 80 per cent of burials imported from neighbouring parishes in the period 1750–91.²⁶

In his discussion of the bills of mortality in 1759, Birch quoted figures for one Westminster parish where 261 corpses—21.2 per cent of the total dying—were carried out for burial in other parishes, and 124—10.1 per cent—were brought in for burial.²⁷ It is not clear whether the cases carried out of the parish were transferred to parishes within the bills of mortality, but Birch noted and that ‘great numbers’ were buried outside in the country, diminishing the overall accuracy of the bills.²⁸

There is no comprehensive data on the traffic in corpses in other places, although there is some additional evidence available for individual parishes. Table 3 summarises data on London parishes selected from the London burial registers in the Society of Genealogists’ Library, focusing on the year 1736, and selecting the first 100 child and first 100 adult burials from each register.

There were generally fewer children than adults who were not resident in their parish of burial, although there were significant numbers of non-resident children in some parishes. The proportion of non-residents varied greatly by parish, with few in St Sepulchre Holborn and St Botolph Aldgate, but substantial numbers in St Dunstan in the West, St George Bloomsbury and St Paul Covent Garden. The evidence reviewed indicates that the traffic in corpses was extensive in some parts of London, and potentially a significant problem for reconstitution studies of individual parishes.

25 Children were either those listed as children in the register or those under the age of 21.

26 Boulton and Schwarz, ‘Yet another inquiry’, 41.

27 Boulton and Schwarz, ‘Yet another inquiry’, 45.

28 Birch, *A collection*, 5–6.

Table 4 Buried wet-nursed children in rural parishes as a proportion of total burials in the bills of mortality, 1604–1749²⁹

Year	Number of nurse burials in rural parishes	Total number of burials in the bills of mortality	Proportion of nurse burials (%)
1604–1609	241	48,358	0.5
1610–1619	262	81,250	0.3
1620–1629	348	136,606	0.3
1630–1639	408	117,035	0.3
1640–1649	248	122,087	0.2
1650–1659	253	129,320	0.2
1660–1669	313	247,692	0.1
1670–1679	511	190,313	0.3
1680–1689	337	223,218	0.2
1690–1699	558	209,718	0.3
1700–1709	1,133	209,434	0.5
1710–1719	835	238,261	0.4
1720–1729	1,025	273,615	0.4
1730–1739	577	260,875	0.2
1740–1749	257	260,601	0.1

Some scholars have emphasised the importance of the burial of wet-nursed children in distorting calculation of infant mortality rates.³⁰ Many wet-nursed children were buried outside their home parish, but the extent of the practice has probably been exaggerated. Gillian Clark has analysed the number of nurse children listed in the burials registers of rural parishes in the counties surrounding London for the period 1540–1750.³¹ Table 4 summarises the number of buried wet-nursed children as a percentage of all burials in the bills of mortality.

The proportion of wet-nursed children never rose about 0.5 per cent of the total number of burials in London, suggesting that it was a relatively minor factor in distorting the measurement of infant mortality levels. There were probably more dead wet-nursed children than traced by Clark, but the number of burials in the bills of mortality was also understated, and there would have been many other burials in London outside of the area of the bills. It is possible that the wealthy resorted more frequently to wet-nursing than the general population, but Clark has presented evidence for the frequent use of such nursing amongst families with modest incomes.³² Even if the wealthy were the main

29 The number of buried wet-nurse children are taken from Clark, *The nurse*, 110–13; burials in the bills of mortality are from J. Marshall, *Mortality in the metropolis* (London, 1834) and W. Maitland, *The history and survey of London* (London, 1775), 738, 739.

30 R. Finlay, *Population and metropolis: the demography of London, 1580–1650* (Cambridge, 1981), 99, 105; Newton in the <http://www.history.ac.uk/cmh/pip/> website.

31 G. Clark, *The nurse children of London, 1540–1750: a population study* (unpublished University of Reading, D.Phil Thesis, 1988).

32 Clark, *The nurse*, 98–100.

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Table 5 Mean period of parish residence of men aged 20–59, London 1703–1713

Age group 20–29		Age group 30–39		Age group 40–49		Age group 50–59	
Mean age (N = 100)	Mean years of residence	Mean age (N = 100)	Mean years of residence	Mean age (N = 100)	Mean years of residence	Mean age (N = 100)	Mean years of residence
25.1	7.1	34.5	8.9	43.6	13.2	52.9	15.4

users of wet-nurses, Table 4 suggests that the burials of wet-nursed children did not occur on a sufficient scale to significantly distort the registration of infant mortality.

Population mobility

For reconstitution purposes, ideally there would be no geographical mobility in order to track families from birth through to marriage and death. London's population is known to have been highly mobile for most of its history, although there is no systematic evidence covering the whole population for the parish register period.

Probably the most valuable source for the study of migration is the Consistory Court of London Depositions which cover a wide range of socio-economic and age groups in virtually all London parishes. Deponents usually provided detailed information on their parish of residence, age, birthplace, and duration of residence. Cliff Webb has edited the depositions for the period 1703–1713, enabling research of the migration patterns of deponents in this period.³³ Table 5 summarises an analysis of the average period of residence of men, with the first 100 cases selected for each age group.

The number of years lived in London parishes was relatively limited, although the average period of residence rose from a minimum of 7 years for the 20–29 age group to a maximum of over 15 years for the 50–59 age group. The overall proportion of men living in their parish of birth was only 6 per cent in this London sample, which can be contrasted with the 22 per cent of men living in their birthplace in a sample of 50 men living in Essex, Hertfordshire and other rural parishes listed in the Consistory records.³⁴ This suggests that it is much less feasible to carry out a total reconstitution study in London than it is elsewhere. However, the requirements for a study of infant mortality are much less exacting. Table 5 indicates that the mean age of residence in London for men over the age of 40 when many families would have completed their fertility was over 13 years, a sufficient period in which to establish patterns of infant mortality.

It is likely that the proportion of natives living in their parish of birth rose in London during the eighteenth century. The following table summarises data on the geographical residence of the fathers of apprentices indentured in London during 1570–1799.

³³ C. Webb, *London bawdy courts, 1703–13* (London, 1999).

³⁴ Webb, *London bawdy courts*.

Table 6 Geographical residence of fathers of plumbers' and masons' apprentices indentured in London during 1570–1799³⁵

Period	Number of plumbers' apprentices	Proportion of fathers residing outside London (%)	Number of masons' apprentices	Proportion of fathers residing outside London (%)
1570–1649	88	85	–	–
1650–1699	140	71	994	68
1700–1749	129	57	884	37
1750–1799	56	39	347	32

There is a linear trend in the reduction of the percentage of fathers living outside London for both plumbers' and masons' apprentices, making reconstitution research more difficult in the earlier period but easier in the later one.

Infant death before baptism

Earlier research has indicated that the interval between birth and baptisms widened significantly in England during the late eighteenth and early nineteenth centuries.³⁶ Berry and Schofield included 11 London parishes in their study of birth/baptism intervals, and concluded that 'in the late seventeenth century all London parishes, irrespective of wealth of their inhabitants, were baptising early and the range of birth/baptism intervals both within and between parishes was small. During the eighteenth century the average birth/baptism interval grew steadily longer, so that by the beginning of the eighteenth century the London parishes were amongst the latest-baptising parishes in the country.'³⁷ Data is available for four London parishes covering the period 1695–1807, and the birth/baptism intervals by which 75 per cent of samples had been baptised are as follows.

There was a significant increase in birth/baptism intervals in all four parishes in the eighteenth century, which was particularly marked in the period after 1771. The St Bartholomew the Less baptism register lists for most of the period 1650–1812 the date of birth and baptisms, and analysis of this data confirms the overall pattern depicted in Table 7.

In the second half of the seventeenth century the great majority of infants were baptised within two weeks, whereas by the beginning of the nineteenth century most children were baptised between two and six weeks. An increasing allowance must be made for infants

35 P. Razzell and C. Spence, 'The history of infant, child and adult mortality in London, 1550–1850', *The London Journal*, 32 (2007), 286.

36 B.M. Berry and R.S. Schofield, 'Age at baptism in pre-industrial England', *Population Studies*, 25 (1971); P. Razzell, *Essays in English Population History* (London, 1994), 104, 105; J. Perkins, 'Birth-baptism intervals in 68 Lancashire parishes, 1646–1917', *Local Population Studies*, 85 (2010), 11–27.

37 Berry and Schofield, 'Age at baptism', 460.

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Table 7 Birth/baptism intervals in days by which 75 per cent of samples have been baptised³⁸

Parish	Period		
	1695–1704	1771–88	1795–1807
St Benet, Paul's Wharf	16	49	98
St Martin Orgar	11	30	65
St Mary Aldermanbury	20	28	96
St Vedast	13	30	178

Table 8 Birth/baptism intervals in St Bartholomew the Less, 1650–1812³⁹

Period	Proportion	Proportion above	Proportion	Total number
	under two	two but below	above six	
	weeks (%)	six weeks (%)	weeks (%)	in sample
1650–1699	89	10	1	583
1700–1749	57	43	1	753
1750–1799	22	70	8	457
1800–1812	1	65	34	71

dying before baptism in calculations of infant mortality based on parish registers in the late eighteenth and early nineteenth centuries. Using civil registration data and evidence from a number of different parishes in England suggests that about 5 per cent of all infants died before baptism in the period 1838–55.⁴⁰ However, reliable estimates of the number of deaths before baptism for the parish register period in London will only be possible with larger samples, and more accurate data on infant mortality before the advent of civil registration.

The under-registration of burials and baptisms

Boulton and Schwarz have noted evidence for the negligence of parish clerks in making returns of the number of burials to the Company of Parish Clerks. Birch claimed in 1759 that there were many omissions of returns, and that ‘this is often ascribed to negligence.’ Likewise, Black wrote in 1781 of the ‘scandalous neglect’ of some parish clerks in making returns of burials.⁴¹ However, negligence was not confined to parish clerks. A former Master of the Parish Clerk’s Company complained in 1765 that ‘Clerks in Orders of large parishes ... for the most part baptise and bury without their deputy Clerk, and therefore their returns are greatly deficient.’⁴²

38 Berry and Schofield, ‘Age at baptism’, 456–7.

39 Razzell and Spence, ‘History of infant’, 278.

40 Razzell, *Essays*, 145–7.

41 Boulton and Schwarz, ‘Yet another inquiry’, 31.

42 Boulton and Schwarz, ‘Yet another inquiry’, 43.

Previous research comparing information in wills and burial registers for Bedfordshire and other English parishes indicated that approximately a quarter of all deaths in the period 1538–1850 went unregistered, and that this was mainly a result of clerical negligence.⁴³ Similar work has been undertaken for London in the period 1538–1750, selecting the first 100 wills of men from a list of abstracts, covering a total of 26 parishes.⁴⁴ Information on the date of the will and the date of probate was extracted, defining the time period in which the person had died. The sample also included information on the intended parish of burial, which in nearly all cases was where other family members had previously been buried. Of the 100 cases, 22 could not be traced in the burial register,⁴⁵ suggesting a substantial degree of under-registration. It is likely that the registration of the burial of children from the general population was even more defective.

It is possible to further evaluate the adequacy of burial registration through the analysis of a ‘Searchers Reports’ register for Bloomsbury in the period 1771–1834, which gives details of people dying in the parish but buried in other London parishes.⁴⁶ The register appears to have been compiled by the local clergyman or parish clerk, for in addition to the details contained in searchers’ reports—the name, age and cause of death—it also lists data on the ‘abode’ and ‘where buried’.⁴⁷ For the period 1771–99 the returns on age and cause of death are sporadic, but information on ‘abode’ and ‘where buried’ is nearly always given. It is not clear why the register was compiled, as in the early period most of the returns of deaths concentrated on details of people buried outside of the parish. It is possible that the register was compiled in order to collect fees on ‘extra-mural’ burials,⁴⁸ although in the later period it appears to have covered all deaths occurring in the parish. The searchers reports register is unique in allowing the direct measurement of the actual number of burials registered in London parish registers, and an analysis was carried out on all cases in the periods 1771–74 and 1801–07, and the following table summarises the data for the two periods combined.

43 P. Razzell, C. Spence and M. Woollard, ‘The evaluation of Bedfordshire burial registration, 1538–1851’, *Local Population Studies*, 84 (2010).

44 The wills were selected from J.B. Whitmore, *London will abstracts*, MS, Society of Genealogists, MX 142–154, and the 26 parishes are: Allhallows the Great, Christchurch, St Andrew by the Wardrobe, St Andrew Holborn, St Antholin, St Augustine, St Bartholomew the Great, St Benet Gracechurch, St Benet Paul’s Wharf, St Botolph Without Bishopgate, St Dionis Backchurch, St Dunstan in the East, St Dunstan in the West, St Giles Without Cripplegate, St Magnus the Martyr, St Martin Orgar, St Mary at Hill, St Mary Magdalen Milk Street, St Mary Woolnoth, St Michael le Querne, St Michael Queenhithe, St Olave Old Jewry, St Peter Cornhill, St Peter le Poer, St Sepulchre, The Temple.

45 A search was made both in *Boyd’s London burials* (Boyd 1935) and the burial register of each individual burial register located in the Society of Genealogical Library and the Ancestry online digital collection of London burial registers.

46 The searchers reports register is deposited in the London Metropolitan Archive, reference P82/GE01/063.

47 The register is in the same hand-writing throughout, and presumably was compiled sometimes after 1834 from detailed searchers reports and other evidence.

48 The right to levy fees on parishioners buried outside parishes was legally established during the eighteenth century. See Richard Burn, *Ecclesiastical Law*, I (London, 1767), 245–7; T.W. Laqueur, ‘Cemeteries, religion and the culture of capitalism’, in J. Garnett and C. Matthew eds, *Revival and religion since 1700. Essays for John Walsh* (London, 1993), 190–1,196. I am grateful to Jeremy Boulton for these references.

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Table 9 Deaths in the Bloomsbury searchers reports register compared to entries in local burial registers, 1771–74 and 1801–07⁴⁹

Stated parish of burial in the searchers reports register	Burial traced in the parish register, 1771–74 and 1801–07	Burials not traced in the parish register, 1771–74 and 1801–07	Total
St Giles in the Fields	71	25	96
St Anne Soho	59	16	75
St George Bloomsbury	57	7	64
St George the Martyr	43	2	45
St Andrew Holborn	20	6	26
St James Picadilly	17	8	25
Whitfields Chapel	16	3	19
St Pancras	6	12	18
St James Clerkenwell	7	3	10
St Martin in the Fields	6	4	10
St Paul Covent Garden	8	1	9
St Marylebone	4	3	7
St John Hackney	5	2	7
St George Hanover Square	5	1	6
St Mary Islington	5	1	6
St Clement	0	4	4
Bunhill Fields	2	1	3
St John Hampstead	3	0	3
St Luke Old Street	3	0	3
St James Paddington	2	1	3
St Paul Hammersmith	2	0	2
St Sepulchre Holborn	1	1	2
St Mary Whitechapel	2	0	2
St Ann Blackfriars	0	2	2
St Botolph Bishopsgate	2	0	2
St Mary Aldermary	1	1	2
St Botolph Aldgate	1	1	2
St Dunstan West	2	0	2
Holy Trinity Clapton	1	0	1
St Paul Shadwell	1	0	1
St Giles Cripplegate	1	0	1
St Andrew Enfield	1	0	1
St Mary Newington	0	1	1
St Mary le Strand	1	0	1
Pentonville	1	0	1
St Dunstan East	1	0	1
St Matthew Bethnal Green	1	0	1
All Saints Edmonton	1	0	1
St Andrew Enfield	1	0	1
Total	360	106	466

⁴⁹ All burials in the years 1771–74 and 1801–07 were searched for in available parish registers for one week before and one month after the date listed in the searchers reports register. 67.0 per cent of burials were traced to within one day of the date in the searchers register.

Although the numbers are small, there is considerable variation in the proportion of burials traced in different parish registers, and this is probably the result of differences in clerical negligence.⁵⁰ Some parishes had very low proportions of untraced cases—for example only 2 of the 45 deaths in St George the Martyr were not traced—suggesting that burial registration was very accurate in some parishes. The total number of cases in Table 9 suggests that about 23 per cent of all deaths went unregistered in London parish registers in the late eighteenth and early nineteenth century. There was little difference in the proportions of untraced cases in the two periods 1771–74 and 1801–07—23.5 per cent and 22.4 per cent⁵¹—and these levels are similar to that found in the comparison of wills with burial registers in the period 1538–1750—22 per cent—suggesting minimal changes in the long-term accuracy of burial registration.

There were probably similar difficulties in the registration of births. Clark in her study of wet-nurses attempted to trace the baptisms of the children dying in rural parishes but born in London in the period 1540–1750. Of her sample of 1,029 nurse children it was only possible to trace 20 per cent of baptisms in the parish of parental residence or the International Genealogical Index, which included 90 per cent of London parishes.⁵² For about half the sample information was available on the parents' parish of residence, at least the father's name and sometimes trade, and even for this group the success rate in tracing baptisms was again approximately 20 per cent, and a sub-sample which included names of both parents had the same proportion of successful traces.⁵³ There were some changes in the successful trace rate over time, varying from 24 per cent in 1550–99, to 25 per cent in 1600–1649, 10 per cent in 1650–1699 and 19 per cent in 1700–1749.⁵⁴

Clark concluded from her research that

While it has been possible to offer reasons for some of the deficiencies of baptism records (such as the rite taking place in the home, in the employer's home, or in the nurse parish), failure to find families in the 1638 and 1695 [enumeration] lists, or to find men in company records considered to be reasonably complete, does lead to the conclusion that there was under-recording on many levels.⁵⁵

This conclusion is confirmed by the study of baptism registration in the parish of Hackney, which was included in the London bills of mortality. It was not possible to trace in the

50 There are over 9,000 cases in the Bloomsbury Searchers' Reports Register in the period 1771–1834, enabling future detailed research on parish variation in register reliability.

51 The total untraced burials in 1771–74 was 50 out of a total of 215, and 56 out of a total of 251 in 1801–07.

52 Clark, *The nurse*, 74.

53 Clark, *The nurse*, 75.

54 Clark, *The nurse*, 76.

55 Clark, *The nurse*, 411.

baptism register 70 per cent of the individuals aged 51–90 and listed as born in Hackney in the 1851 census, suggesting major Anglican under-registration of births in this London parish in the last four decades of the eighteenth century.⁵⁶

Data is available on infant burials in St James, Clerkenwell, in the period 1736–53, which allows an assessment of baptism registration in this large parish, which is a central part of the ‘People and Place’ project. Of the first 100 infant burials in each of the years 1736 and 1741, only 44 and 42 could be traced in the baptism register or the International Genealogical Index—a total trace rate of 43 per cent. This low trace rate, along with the evidence on burial registration summarised in Table 2, suggests that parish registration was very defective in Clerkenwell at this time. This is confirmed by an analysis of infant mortality rates during this period. The IMR calculated by the ‘People and Place’ reconstitution project is 338 per 1,000 in the period 1735–53,⁵⁷ but the calculation of aggregate infant mortality expressing the number of infant deaths as a proportion of baptisms for the same period is 638 per 1,000 (3,163 infant burials expressed as a proportion of 4,956 baptisms).⁵⁸

It would appear from the distribution of ages in the Clerkenwell burial register, that infants were defined as children dying under the age of two, a similar category to that used in the bills of mortality. In the ‘People and Place’ reconstitution schedules for the period 1736–40, there were 682 infant dying under the age of one, and 95 children dying between one and two, with a total of 777 children dying under the age of two. Using this number of deaths by age allows a correction of the 3,163 infant burials above, by multiplying it by the ratio 682/777, giving a total of 2,777 infant deaths under one year. This number yields a new infant mortality rate of 560 per 1,000, very significantly higher than the published reconstitution IMR of 338 per 1,000. Given all the problems and uncertainties about the quality of both bills of mortality and parish registers, it is necessary to look elsewhere for reliable ways of measuring infant mortality.

The use of the same-name method for correcting infant mortality rates

Finlay, in his reconstitution study of infant mortality in six London parishes in the sixteenth and seventeenth centuries, found varying rates, some of which were very low. The following rates are all per 1,000 baptisms: All Hallows Bread Street, 1538–1653: 83; St Peter Cornhill, 1580–1650: 107; St Christopher le Stocks, 1580–1650: 55; St Michael Cornhill, 1580–1650: 109; St Mary Somerset, 1605–1653: 256; St Botolph Bishopgate,

56 Razzell, *Essays*, 96.

57 G. Newton, ‘Infant mortality variations, feeding practices and social status in London between 1550 and 1750’ *Social History of Medicine* (Advance Access published August 27, 2010), 16; R. Smith and S. Szepter, ‘Reproducing generations’, *Wellcome History*, 42 (2009), 10.

58 The infant burials are taken from the *St James Clerkenwell parish register* (Harleian Society Registers XVII, 1891), the baptisms from the ‘People and Place’ dataset.

1600–1650: 153.⁵⁹ Finlay was surprised by the low rates in some of the parishes, and suggested that these might have been the result of wet-nursed children dying away from home and being excluded from calculated rates.⁶⁰ However, as we have seen in Table 4, the number of buried wet-nurse children as a proportion of all London burials was under 0.5 per cent in the first half of the seventeenth century, indicating that dead wet-nursed children are not a satisfactory explanation of very low infant mortality rates.

The name of a dead child was often given to a subsequent child of the same sex, allowing an independent method of measuring burial registration reliability, and Finlay considered using the same-name method to correct for burial under-registration.⁶¹ He rejected the method mainly on the grounds that some same-name children may have been living at the same time, undermining the central assumption of a dead child linked to a subsequent child of the same sex. Evidence from will abstracts for different areas of England suggests he was correct for the sixteenth century—particularly for the first half of the century—but living same-name children appear to have virtually disappeared in England by the seventeenth century.⁶²

The following table summarises available data on will abstracts from a number of church courts in London. Table 10 indicates that there were high proportions of living same-name children in the early sixteenth century, but the proportion was declining rapidly by the early seventeenth century. This may have been partly the result of the introduction of parish registration, with parents having to formally name their children, and was possibly linked to the decline of children being named after godparents.⁶³

The practice of giving the name of a dead child to a subsequent sibling of the same sex was very widespread. In six rural parishes the proportion of eligible families using same names varied between 50 and 73 per cent,⁶⁴ whereas the percentage was lower in eight London parishes, at 33 per cent.⁶⁵ Same-name analysis is in effect an independent method of studying infant mortality, as it is known that an infant or child has died between the death of an older sibling and the baptism of a subsequent child of the same name. Except for death before baptism, the method enables the correction of all forms of burial under-registration: a child being buried outside its parish of baptism, including wet-nursed children; the non-registration of burials due to clerical negligence; the

59 R.A.P. Finlay, 'The accuracy of the London parish registers, 1580–1653', *Population Studies*, 32 (1978), 99.

60 Finlay, 'Accuracy'.

61 For a full discussion of the use of the same-name method see Razzell, *Population and disease*, 3–18.

62 See P. Razzell, 'Living same-name siblings in England', below, 65–9.

63 R. Houlbrooke, *The English family 1450–1700* (London, 1984), 131.

64 Houlbrooke, *English family*, 9.

65 See Razzell and Spence, 'The history', 273–76 for details of the research on these parishes based on Boyd's families of London dataset. There were 698 eligible families—with children of the same sex as an older dead sibling—232 of whom were given the same first name.

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Table 10 Living siblings with the same names in will abstracts with at least two siblings of the same sex, 1439–1699⁶⁶

District	Date of Will	Number of living same name siblings	Total number of siblings	Proportion of living same name siblings (%)	Sample
London Consistory Court	1492–1547	6	49	12.2	All Families
Surrey Archdeaconary Court (London*)	1537–1541, 1558–1560	6	194	3.1	All Families
Surrey Archdeaconary Court (London*)	1608–1615, 1615–1623, 1620–1631	0	288	0.0	First 100 Families
London Commissary Court	1629–1634	4	640	0.6	First 100 Families
London Commissary Court	1644–1646	0	149	0.0	All Families

Notes: *Includes Southwark, Bermondsey, Lambeth, Wandsworth, Battersea and Rotherhithe.

Table 11 Burial registration accuracy using the same name and enumeration listing/parish register comparison methods, 1681–1709⁶⁷

	Children baptised with same names searched for in the burial register	Children baptised but not buried and searched for in the enumeration listing
Number traced	97	206
Number not traced	48	110
Total number	145	316
Proportion not traced (%)	33.1	34.8

failure to identify the burial of a child because of poor inadequate information in the burial register.

Previous research suggests that same-name children are a representative sample, indicated by comparisons with other methods of evaluating burial registration reliability. Table 11 summarises the results of reconstitution study of 16 London parishes comparing same name analysis with research tracing baptised children in the London 1695 Marriage

66 I. Darlington, *London consistory court wills, 1492–1547*, London Record Society, 3 (1967); C. Webb ed., *Archdeaconary Court of Surrey Will Abstracts, 1537–41, 1559–60, 1608–15, 1615–23, 1620–31* (Transcripts in London Metropolitan Archives); *Commissary Court of London will abstracts, volume 26 (1629–1634)*, www.Genuki.org.uk/big/eng/Wills/Wills.1.html; *Commissary Court of London will abstracts, volume 29 (1644–5–1646)*, www.Genuki.org.uk/big/eng/Wills/Wills.3.html

67 Razzell, *Population and disease*, 12–14. The same-name children were from reconstitution schedules covering the period 1681–1709, whereas the enumeration listing/ parish register sample were all children baptised in the period 1685–1694.

Duty Enumeration Listing. The latter children were all baptised less than ten years previous to 1695 and not listed in the burial register.

The levels of untraced children are similar using both methods, suggesting that the same-name method is a reliable way of measuring burial under-registration. Of 37 eligible same-name children not traced in the burial register, none were found in the enumeration listing, confirming the validity of the assumption that a missing same name case is the equivalent to an unregistered burial.

The proportion of untraced deaths in Table 11 using the same-name method (33.1 per cent) is higher than that found in the wills/burial register comparison method and the data derived from the Bloomsbury searchers' register summarised in Table 9, which was of the order of 22 to 23 per cent. However, the same-name method in addition to unregistered deaths also includes missing burials due to the traffic in corpses and, as we saw earlier, this is possibly of the order of 10 per cent, making the various measures of burial under-registration consistent with each other. These figures are for different periods and parishes, and in future it will be necessary to coordinate the measurement of burial registration using different methods for the same parishes and periods.

It is also possible to apply the same-name method to the measurement of baptism registration reliability. This involves the analysis of two or more burials of a same name child, attempting to trace the baptism of the older sibling. Of 178 same-name burials in Clerkenwell in the period 1538–1753, 50 (21.9 per cent) could not be traced in the baptism register,⁶⁸ suggesting that more than a fifth of births were not registered, similar to the overall proportion of untraced wills in London burial registers in the period 1538–1750, and the untraced burials in the early 1770s and 1800s summarised in Table 9.

The above finding raises a difficulty about a central assumption made by the 'People in Place' project regarding burials which cannot be linked to previous baptisms. The project has adopted the assumption that all such burials are the result of children dying before baptism, and has created dummy baptisms with a date of birth identical to the date of burial.⁶⁹ The evidence reviewed above suggests that most missing baptisms were the result of birth under-registration, and this is consistent with what is known about Anglican canon law which forbade the ceremony of burial and the registration of unbaptised children.⁷⁰

68 This analysis was carried out on the first 13,000 cases in the Clerkenwell reconstitution schedules in the 'People in Place' dataset.

69 For a discussion of this assumption see E.A. Wrigley, R.S. Davies, J.E. Oeppen and R.S. Schofield, *English population history from family reconstitution 1580–1837* (Cambridge, 1997), 239–40. The 'People in Place' project has also allocated stillbirths to the number of dummy baptisms where they can be assigned to a particular family reconstitution schedule.

70 Cox, the author of a book on English parish registers wrote, 'the Church forbade the ceremonial interment of all excommunicated or unbaptised persons ... and that the insertion of such burials in the registers was only fitful and irregular.' J.C. Cox, *The parish registers of England* (London, 1908), 98.

Table 12 The proportions of dummy baptisms in Clerkenwell and Cheapside, 1538–1753⁷¹

	Period	Number of baptisms	Number of dummy baptisms	Proportion of dummy baptisms (%)
Clerkenwell	1550–99	1,859	94	5.1
	1600–49	7,813	619	7.9
	1650–99	11,760	1,372	11.7
	1711–14	1,344	68	5.1
	1735–53	5,946	1,115	18.8
Cheapside	1538–99	2,433	19	0.8
	1600–49	2,239	77	3.4
	1650–99	1,927	74	3.8
	1700–24	520	0	0.0

Rickman raised in the questions to clergymen about the parish register returns in the 1801, 1811, 1821, 1831 and 1841 censuses, the following query:

Are there any Matters, which you think it to remark, in Explanation of your Answers to ... Whether any or what Annual Average Number of Baptisms, Burials, and Marriages, may (in your opinion) take place in your Parish, without being entered in the Parish register.⁷²

Rickman concluded from the answers to this question that ‘children who die before baptism are interred without any religious ceremony, and consequently are not registered’, a conclusion that he repeated in all the census publications for which he was responsible.⁷³ A manuscript giving the answers of clergymen to the above question in 1811 has survived and is deposited in the British Library. The great majority of responses indicate that the burials of unbaptised children were not registered.⁷⁴ Even where unbaptised children were listed in the burial register, they invariably did not give a first name to the child,⁷⁵ and therefore would not be included in any reconstitution analysis.

The proportions of dummy baptisms in the two main samples in the ‘People in Place’ project are as shown in Table 12, above. There were marked variations in the proportions of dummy baptisms both over time and between the different parish groupings. The number of dummy baptisms was larger in Clerkenwell than in Cheapside, and was particularly high in the period 1735–53 (18.8 per cent) adding in effect 188 infant burials

⁷¹ The source of this data is the ‘People in Place’ dataset, UK Date Archive.

⁷² *Enumeration Abstract 1811 Census*, xvii.

⁷³ See the *Enumeration Abstracts* to the 1801, 1811, 1821, 1831 and 1841 censuses.

⁷⁴ *Population Act 1811. Parish Register Abstract. Remarks made in Answer to the 3rd Question addressed to the Reverend the Officiating Ministers in England* (British Museum Add. MS 6896).

⁷⁵ See for example the Cardington, Bedfordshire burial register for the period 1737–1812 and the Kempton, Bedfordshire burial register for 1801–12.

per 1,000 baptisms to the calculated infant mortality rate for this period.⁷⁶ This creates major problems for the accurate measurement of infant mortality, particularly as all the children covered by dummy baptisms are assumed to have died on the first day of birth.

Conclusion

A review of evidence on the London bills of mortality and parish registers indicates that there were major registration problems throughout the whole of the period between the sixteenth and nineteenth centuries. With the bills of mortality this was the result of the exclusion of many people on the grounds of religious dissent or the existence of burial grounds outside those officially recognised by the company of parish clerks. Also, there is evidence that some of the dead were removed to parishes outside of London, and this was particularly the case with wealthy families. More importantly, there is evidence that many parish clerks were very negligent in making returns of deaths to the Company of Parish Clerks.

There has been an attempt to address the problem of the unreliability of the bills by using reconstitution techniques on individual parish registers. There are, however, major problems with reconstitution studies of London parishes, resulting from the traffic in corpses between parishes both inside and outside of London, including the burial of wet-nursed children, and the negligence of clergymen in registering both baptisms and burials. It is likely that the latter was the major factor in under-registration. The same-name and census/parish register research suggests that on average at least a third of all burials went unregistered in parish registers on the above accounts.

London provides a very fruitful focus for further research because of the abundance of its demographic data, allowing the triangulation of sources and the detailed evaluation of different methods of measuring burial registration accuracy. Only when more research of this kind has been done will it be possible to fully clarify the history of infant mortality in London during the three centuries between 1538 and 1837, a period of major economic and social transformation.

76 The large number of dummy baptisms for this period is probably partly the result of the lack of information on parents names, the 'People in Place' project relying mainly on data on surname and infant burials for nominal record linkage.