

---

# The Bedfordshire Demographic Crisis of 1727–1731: Some Evidence of Differentiated Socially Selective Mortality\*

Paul Schoon<sup>1</sup>

---

## Abstract

*This paper uses parish burial records to examine the impact of the 1727–1731 mortality crisis in Bedfordshire. This was a significant local event resulting in almost 4,000 excess deaths relating to multiple overlapping events starting in the autumn of 1727 and ending in the spring of 1731. It is argued that the temporal and geographic spread of burials is indicative of epidemic disease, most likely typhus and influenza-like infections, with famine playing, at best, a minor and localised role. The spread and impact of the disease was socially selective though with an element of differentiation. The elderly, the labouring poor and those living in urban areas found themselves at greatest risk, due to age-related susceptibility and their cramped living conditions, which created the conditions that allowed disease to spread effectively. Death rates among the traditional poor reduced during the crisis, possibly representing the triumph of effective local parish arrangements under the Old Poor Law.*

## Introduction

The prospect of premature death was a constant companion in eighteenth century England, dominating the life of every citizen.<sup>2</sup> And so it was in the Bedfordshire village of Carlton, where Benjamin Rogers, the local rector, assiduously recorded the happenings in and around his parish, taking a keen interest in medicine and focusing many of his observations on the health and well-being of those within his circle of acquaintances. In October 1729 he made his first mention of fever, recording: ‘[h]eard that Dr Mead, his Lady, and all the Family but Mrs Cox were down with the Fever. *Miserere*. Very much more now in this kingdom’.<sup>3</sup> In the course of the following year, Rogers tracked the route of the fever through London and then across Bedfordshire until it arrived in his own parish in September 1730. Unknowingly, he was a first-hand observer of an exceptional period of mortality that set it apart from similar crises in its spread, lethality and duration.<sup>4</sup> The crisis

---

\* <http://doi.org/10.35488/lps107.2021.40>.

1 Paul Schoon: [pjd.schoon@virgin.net](mailto:pjd.schoon@virgin.net).

2 R. Porter, *Disease, Medicine and Society in England, 1550–1860* (Cambridge, 1995), p. 17.

3 B. Rogers, *The Diary of Benjamin Rogers, Rector of Carlton, 1720–71*, edited by C.D. Linnell (Streatley, 1950), p. 14.

4 A. Gooder, ‘The population crisis of 1727–30 in Warwickshire’, *Midland History* 1(4) (1972), pp. 1–22, here at p. 3, <https://doi.org/10.1179/mdh.1972.1.4.1>.

lasted from 1727 to 1731, with the increase in the death rate being so pronounced as to ensure that 1727–1728, 1728–1729 and 1729–1730 were all designated as three-star crisis years by E.A. Wrigley and R.S. Schofield, with an annual crude death rate more than 30 per cent above the 25-year moving average.<sup>5</sup> While the increase in deaths can be detected at the national level, not every parish was affected, and those that were suffered the effects at different times.<sup>6</sup> Nineteen per cent of parishes, largely in north-west England, suffered their first crisis in August 1727 before it spread south east, through the Midlands to Bedfordshire and into East Anglia.<sup>7</sup> The long duration of the crisis disseminated deaths more evenly through the years so that dramatic weeks and months, which made an impact on officials at all levels, were largely absent. Few parish registers contain any mention of a rise in mortality, or its likely cause, and the lack of comment in state papers suggest that it was seen as a local event of little national significance. The very size and complexity of the 1727–1731 demographic crisis has limited research to either high-level national analysis of aggregate data or local studies examining events within the context of a county or town.<sup>8</sup> If there is a commonality between them it is that they fail to agree a single cause, with authors falling into one of three main groupings: those attributing the mortality to an epidemic; those favouring a subsistence crisis caused by a combination of poor harvests and rising prices; and those believing epidemics and famine each had a role.<sup>9</sup>

---

5 See E.A. Wrigley and R.S. Schofield, *The Population History of England 1541–1871: a Reconstruction* (London, 1981), pp. 333–4. Wrigley and Schofield categorised mortality crises using a three-star system based upon the percentage deviation of the annual crude death rate from a centred 25-year moving average, with any year where the death rate was at least 10 per cent above the moving average defined as a crisis year. They divided crisis years into one of three types: three-star, where the death rate was 30 per cent or more above trend; two-star, where the death rate was between 20 and 30 per cent above trend; and one-star in which the death rate was between 10 and 20 per cent above trend. A good overview of the discussion of whether to include the year being tested in the moving average is provided in A. Hinde, ‘A review of methods of identifying mortality “crises” using parish register data’, *Local Population Studies* 84 (2010), pp. 82–92, here at p. 84.

6 M.A. McHugh, ‘Dearth, community and the Poor Law in Wiltshire, 1670–1744’ (unpublished PhD thesis, University of Binghamton, 1998), pp. 266–7.

7 Wrigley and Schofield, *Population History of England*, p. 681.

8 See J. Healey, ‘Socially selective mortality during the population crisis of 1727–1730: evidence from Lancashire’, *Local Population Studies* 81 (2008), pp. 58–74, for a good example of a local study.

9 See D.E.C. Eversley, ‘A survey of population in an area of Worcestershire from 1660–1850 on the basis of parish records’, *Population Studies* 10 (1957), pp. 253–79, here at p. 265, <https://doi.org/10.1080/00324728.1957.10413223>; J.A. Johnston, ‘The impact of the epidemics of 1727–1730 in South West Worcestershire’, *Medical History* 15 (1971), pp. 278–92, here at p. 282, <https://doi.org/10.1017/S0025727300016732>; J.D. Chambers, ‘Economic change in the Vale of Trent 1700–1800’, *Culture, Theory and Critique* 2 (1958), pp. 86–109, here at p. 92, <https://doi.org/10.1080/14735785809366326>; J. Skinner, ‘Crisis mortality in Buckinghamshire 1600–1750’, *Local Population Studies* 28 (1982), pp. 67–72, here at p. 68; D. Levine, *Family Formation in an Age of Nascent Capitalism* (London, 1977), pp. 101–2; M. Klemp and J. Weisdorf, ‘The lasting damage to mortality of early-life adversity: evidence from the English famine of the late 1720s’, *European Review of Economic History* 16 (2012), pp. 233–46, here at p. 234, <https://doi.org/10.1093/ereh/hes003>; C. O’Gráda, ‘Economic history: “an isthmus joining two great continents”?’ Invited Address to the 4th Annual Meeting of the Associazione per la Storia Economica (l’Università degli Studi di Modena e Reggio Emilia, 2019), pp. 1–52, here at pp. 15–6, <http://dx.doi.org/10.2139/ssrn.3518432> [accessed 27 April 2021].

The objective of this article is to add regional data to the corpus of knowledge that exists for the crisis. It will briefly present evidence to determine the scale, duration and cause of increased levels of mortality across the county of Bedfordshire, with the main focus being to determine whether the crisis contained a socially selective component. Three key questions relating to social selectivity are discussed. Were the old more likely to die than the young? Were there any differences in mortality patterns between urban and rural areas? What role did wealth play, and specifically were the traditional poor and the labouring poor more vulnerable to the effects of the crisis?

## The study area

This work focuses on Bedfordshire, one of England's smallest counties. In the early decades of the eighteenth century the county was unenclosed and was to remain so until the last decade of the century.<sup>10</sup> Its economy was based on agriculture with grain as the main crop, growing in the north of the county, with dairy farming dominating the southern areas. Almost all of the land was of prime agricultural grade with only the sterile ridge of land transecting the county described as 'dreary and uncomfortable'.<sup>11</sup> Local transport networks were poor despite the Great North Road being turnpiked in 1725 and the Luton to Bedford route, now known as the A6, turnpiked in 1727.<sup>12</sup> The grain was of such value that transport difficulties were overcome with Daniel Defoe describing 'carriers buy[ing] great quantities of provisions here [in Bedford] for London markets'.<sup>13</sup> The beginnings of a local manufacturing industry were starting to form, with lace making establishing itself as a commercial enterprise in northern Bedfordshire villages, while in the south straw plaiting and straw hat manufacture were noted by Thomas Baskerville in his description of Dunstable in 1681.<sup>14</sup> There was no evidence of demographic stress despite the growth in trade and local populations; however that situation was to change as a result of the 1727–1731 demographic crisis, making the county ideally placed to address a gap in historical knowledge relating to the underlying cause. It has been well established that Bedfordshire was affected but no specific studies have been conducted, despite the county having an extensive set of parish records available, including a rare set of burial registers for the village of Riseley in which causes of death are recorded between 1690 and 1742.<sup>15</sup>

---

10 J. Godber, *History of Bedfordshire 1066–1888*, 3rd edn (Bedford, 1969), p. 404.

11 Pinnock's County Histories, *The History and Topography of Bedfordshire, with Biographical Sketches etc. and a Neat Map of the County* (London, 1820), p. 5.

12 M. Oake, M. Dawson, M. Edgeworth and P. Murphy, 'Research and archaeology: resource assessment, research agenda and strategy', *Bedfordshire Archaeology Monograph* 9 (2007), p. 122.

13 D. Defoe, *A Tour Thro' the Whole Island of Great Britain, Divided into Circuits or Journies*, (1724–1727), (London, 1927), 'Letter 7, part 2: East Midlands'.

14 See G.F.R. Spenceley, 'The origins of the English pillow lace industry', *Agricultural History Review* 21 (1973), pp. 81–93, here at p. 85; Historical Manuscripts Commission, *Thirteenth Report, Appendix, Part II. The Manuscripts of his Grace the Duke of Portland* (London, 1893), p. 274.

15 F.G. Emmison (ed.) *Bedfordshire Parish Registers, Volume 28: Riseley* (Bedford, 1943), pp. B33–B40.

## The Bedfordshire Demographic Crisis of 1727–1731

---

Eighteenth-century Bedfordshire comprised 129 parishes for which a complete set of parish registers survive covering the period 1720–1740. From these records the registers of 26 out of the 28 Bedfordshire parishes contained within the Cambridge Group for the History of Population and Social Structure's (CAMPOP's) database of 404 parishes were examined in detail, the only exception being the parish registers for Campton with Shefford and Studham.<sup>16</sup> These were supplemented with data drawn from the parishes of Goldington and Renhold. They contain aggregate monthly totals, which allow high-level analysis and the identification of crisis periods but do not allow the data to be differentiated by age or gender, both essential if progress is to be made in understanding the detailed nature of the crisis. This work moves beyond aggregate monthly totals through the use of transcribed parish registers, which provide information at the level of the individual. Deaths have been differentiated, at a minimum, based on gender and relative age and, where sufficient data exist, by the occupation of adult males, and in one set of records, by cause of death. This core CAMPOP group consists largely of rural parishes, with only Ampthill and Woburn classed as urban. Assessing whether the crisis affected urban and rural parishes differently required the core data to be supplemented with additional records from the urban parishes of Luton, Pottton, Bedford St Mary, Bedford St Peter, Biggleswade, Dunstable and Leighton Buzzard, resulting in an overall total of 35 parishes (Figure 1).<sup>17</sup> All the parishes selected to represent an urban parish subset are classified as towns in John Adams' *Index Villaris*.<sup>18</sup> For the purpose of this study village parishes represent the rural subset, while town parishes represent the urban subset and the terms 'rural' and 'village', and 'town' and 'urban' are used synonymously.

The burial registers for the 35 parishes upon which this study is based do contain some small gaps in coverage, as shown in Table 1. Obvious gaps in the parish registers were remedied by using interpolation, based on the assumption that any insertion would not alter the long term trend. This ensured that datasets were complete without making any significant difference to the overall result.<sup>19</sup>

---

16 For details of the database see R. Schofield and A. Hinde, *Parish Register Aggregate Analyses*, 2nd edn (Alton, 2020), p. 35. Access to the Campton with Shefford and Studham parish registers was prevented by the Covid-19 pandemic.

17 The village parish registers consulted were: Blunham, Bolnhurst, Chalgrave, Clophill, Cranfield, Felmersham, Flitwick, Goldington, Harlington, Kempston, Maulden, Millbrook, Milton Ernest, Northill, Pavenham, Pulloxhill, Renhold, Riseley, Sandy, Souldrop, Southill, Stevington, Thurleigh, Tingrith, Toddington and Wootton. The town parish registers consulted were: Ampthill, Bedford St Mary, Bedford St Peter, Biggleswade, Dunstable, Leighton Buzzard, Luton, Pottton and Woburn. Copies of the aggregate data for the parishes included in the Cambridge Group for the History of Population and Social Structure's database can be obtained from the Local Population Studies Society: editor@localpopulationstudies.org.uk. Copies of the transcribed registers for the county are available from the Bedfordshire Archives: see <https://bedsarchives.bedford.gov.uk/Guide-to-Collections/FamilyHistory/BedfordshireParishRegisterSeries.aspx>.

18 J. Adams, *Index Villaris: or, an Alphabetical Table of All the Cities, Market-towns, Parishes, Villages, and Private Seats, in England and Wales* (London, 1680).

19 Eversley, 'Survey of population', p. 255.

**Table 1 Coverage of the parish burial register dataset, 1720–1740**

Parish Type	Available months	Missing months	% coverage
Urban	2,268	76	96.6
Rural	6,552	161	97.5
Total	8,820	237	97.3

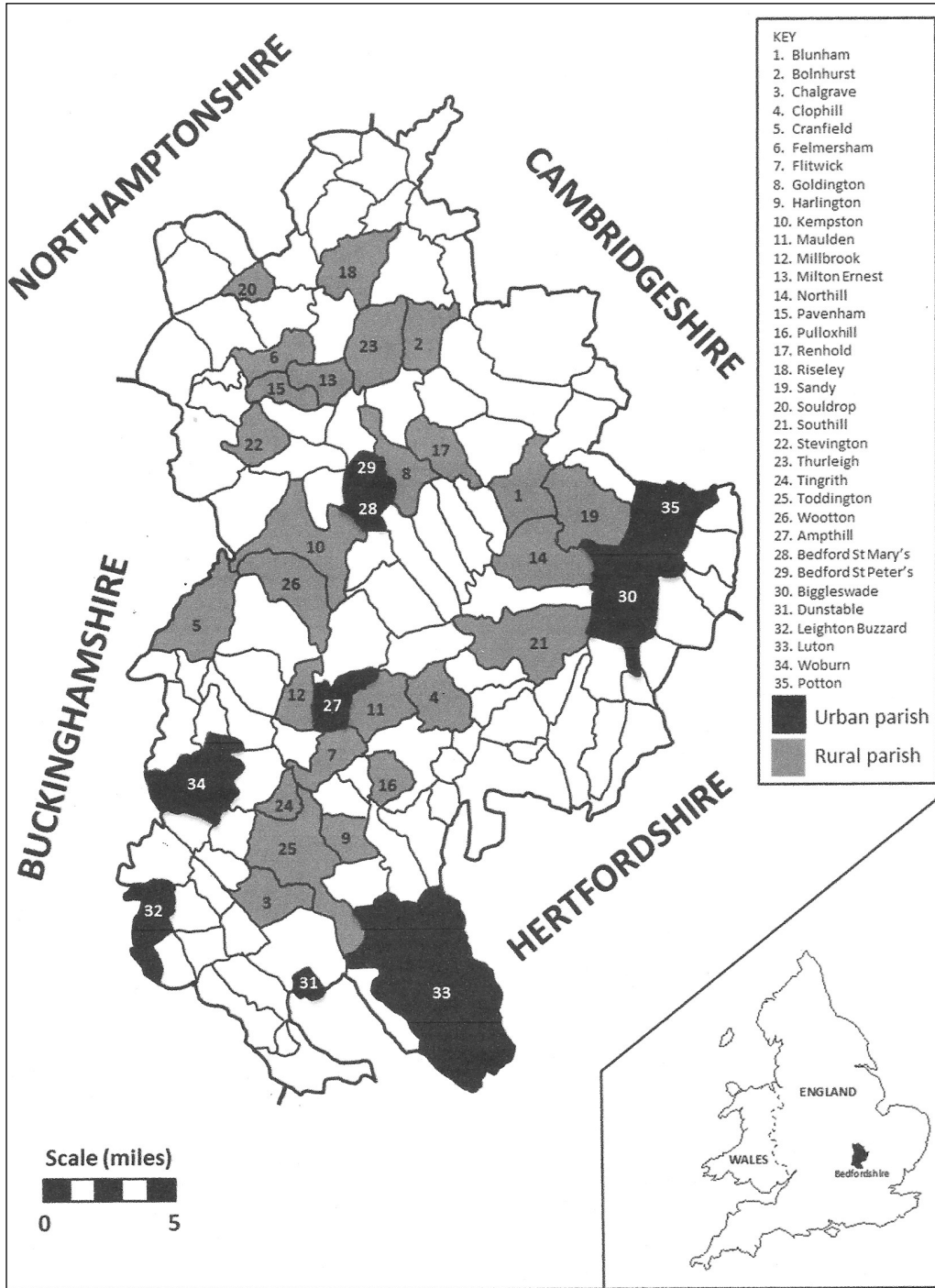
**Source:** Burial registers of Amptill, Bedford St Mary, Bedford St Peter, Biggleswade, Blunham, Bolnhurst, Chalgrave, Clophill, Cranfield, Dunstable, Felmersham, Flitwick, Goldington, Harlington, Kempston, Leighton Buzzard, Luton, Maulden, Millbrook, Milton Ernest, Northill, Pavenham, Potton, Pulloxhill, Renhold, Riseley, Sandy, Souldrop, Southill, Stevington, Thurleigh, Tingrith, Toddington, Woburn and Wootton. Copies of the transcribed registers for the county are available from the Bedfordshire Archives: see <https://bedsarchives.bedford.gov.uk/Guide-to-collections/FamilyHistory/BedfordshireParishRegisterSeries.aspx> [accessed 9 November 2021].

Since the registers are the main source of information used in this study their limitations need to be understood. They contain records of individuals who followed the rites of the Church of England and as such there will inevitably be a degree of under-registration relating particularly to Roman Catholics and dissenters, those too poor to afford a burial ceremony, unbaptised infant burials and those not recorded in the registers due to clerical negligence.<sup>20</sup> Comparing probate records with burial registers in Bedfordshire indicates that between 1700 and 1749 there was a potential under-registration of 22 per cent, attributed to a random process driven by poor clerical record keeping.<sup>21</sup> While it is possible that the effect of under-registration might render the sample size unrepresentative, the evidence suggests that this is unlikely. Poor administration, particularly if it was random, would under-record all social, economic and occupational groups equally, and work by Peter Razzell has demonstrated that there is no known association between occupation and registration accuracy.<sup>22</sup> Furthermore, it appears that religious dissent played a minor role in Anglican burial under-representation with only 2,595 non-conformist burials recorded in the Bedfordshire Family History Society burial database between 1704-1850 at an average of 18 burials for each year of registration.<sup>23</sup> Nevertheless, a high level of potential under-registration in a non-crisis period does introduce the possibility of even more under-registration during a crisis when the church authorities were under stress. While this cannot be eliminated completely no evidence can be located to support this. The complete dataset for this study comprises burial information for 14,017 individuals and, since it is not being used to reconstruct population sizes, the effects of under-registration can be mitigated through the use of a large sample size.

- 
- 20 S. Watts, 'Some aspects of mortality in three Shropshire parishes in the mid-seventeenth century', *Local Population Studies* 67 (2001), pp. 11–25, here at p. 12.
- 21 P. Razzell, C. Spence and M. Woollard, 'The evaluation of Bedfordshire burial registration, 1538–1851', *Local Population Studies* 84 (2010), pp. 31–54, here at p. 31.
- 22 P. Razzell, 'An evaluation of the reliability of Anglican adult burial registration', *Local Population Studies* 77 (2006), pp. 42–57, here at p. 55.
- 23 Figures calculated from data presented in Razzell *et al.*, 'Evaluation of Bedfordshire burial registration', p. 46.

# The Bedfordshire Demographic Crisis of 1727–1731

Figure 1 Location of the 35 Bedfordshire parishes in this study



## One crisis or multiple crises?

Burial registers remain the main source of death data pre-1837 and it is accepted practice to use burial records as surrogates for deaths.<sup>24</sup> In an age before refrigeration, it is unlikely that burials were delayed, and the Clophill parish register from central Bedfordshire, which records the dates of death and burial for individuals between August 1654 and March 1658 shows a close temporal proximity between the events, with 86 per cent of burials taking place within a day of death and all burials occurring within three days.<sup>25</sup> Little seems to have changed by the 1720s and the diary of Benjamin Rogers records four burials during the crisis, all of which took place within four days of death.<sup>26</sup> Figure 2 gives cumulative burials in the sample of 35 Bedfordshire parishes for males and females and shows a large increase in burial frequency between the summer of 1727 and the summer of 1731, equating to 1,250 excess deaths in the parishes examined over the course of the crisis, or 1.6 per cent of the resident population per annum.<sup>27</sup>

Figure 2 also illustrates that the increase in mortality affected both sexes equally and was not a single peak of long duration but several overlapping events, suggesting a composite origin.<sup>28</sup> Since many causes of death have a seasonal component, a comprehensive understanding of likely causes in Bedfordshire must move away from the macro-analysis of the crisis favoured by many researchers in favour of a detailed seasonal examination on a parish-by-parish basis. There are two characteristic patterns of mortality to consider. Epidemic disease moves in a wave motion, spreading slowly as the infection diffuses from one community to another. Famine mortality, by contrast, is observable over a wide area at the same time.<sup>29</sup> In order to identify the pattern of mortality, the average numbers of deaths per 100,000 population for each parish were calculated with population estimates taken from the Hearth Tax returns of 1671.<sup>30</sup> The resultant information is shown in Figure 3 as a series of isopleth maps, the scale of which is representative and reveals how the actual

---

24 R. Humphreys, 'Mortality crises in sixteenth-century Dorking', *Local Population Studies* 39 (1987), pp. 46–53, here at p. 46.

25 F.G. Emmison (ed.) *Bedfordshire Parish Registers, Volume 21: Clophill* (Bedford, 1940), p. B52.

26 Rogers, *Diary of Benjamin Rogers*, pp. 7–33.

27 Excess deaths are a measure of number of deaths from all causes during a crisis above and beyond what would be expected under 'normal' conditions. In the non-crisis years between 1720 and 1740 there were 604 deaths per annum across the surveyed parishes, rising to 854 during the crisis years. Over the course of the crisis there were therefore 1,250 excess deaths (equating to 250 per annum). The resident population of the 35 sampled areas was calculated from the Bedfordshire Hearth Tax return for 1671 as 15,863, with excess deaths equivalent to 1.6 per cent of the resident population per annum, or 7.9 per cent over the period of the crisis. Whole county population figures from E. A. Wrigley (ed.) *The Early English Censuses* (Oxford, 2011), suggests a resident population for Bedfordshire in 1700 of 50,163. Extrapolating on a countywide basis suggests there were 3,950 excess deaths across Bedfordshire between 1727 and 1731.

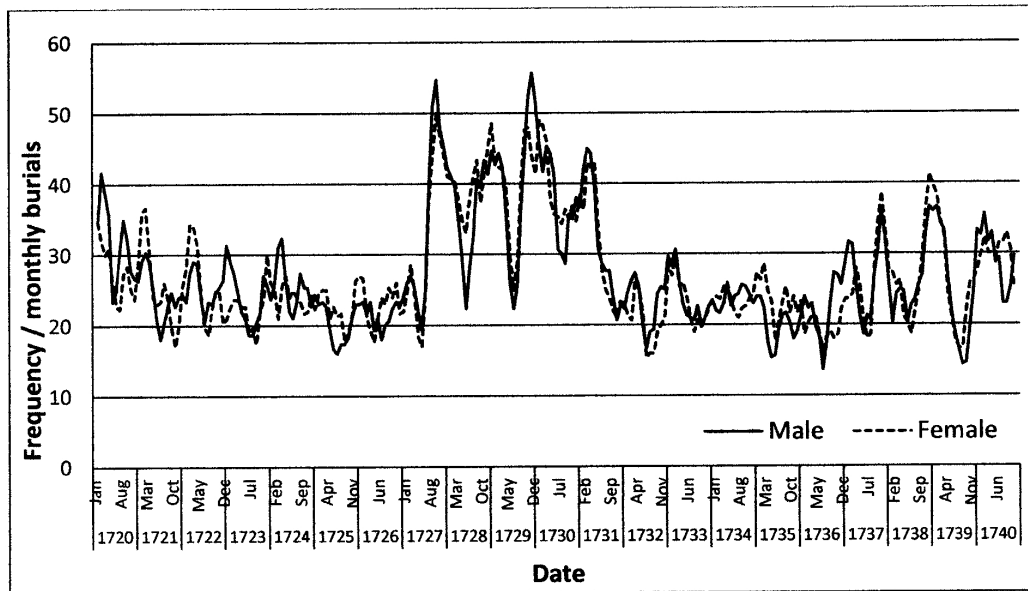
28 The pattern of male and female deaths between 1720 and 1740 has a correlation coefficient of 0.87 indicative of a strong positive relationship.

29 A.E. Imhof and B.J. Lindskog, 'Les causes de mortalité en Suède et en Finlande entre 1749 et 1773', *Annales: Histoire, Sciences Sociales* 29, pp. 915–33, here at p. 916.

30 L.M. Marshall (ed.), *The Bedfordshire Hearth Tax Return for 1671* (Bedford, 1934).

## The Bedfordshire Demographic Crisis of 1727–1731

**Figure 2** Burial totals (3-month running mean) for 35 Bedfordshire parishes



**Source:** Burial registers of Ampthill, Bedford St Mary, Bedford St Peter, Biggleswade, Blunham, Bolnhurst, Chalgrave, Clophill, Cranfield, Dunstable, Felmersham, Flitwick, Goldington, Harlington, Kempston, Leighton Buzzard, Luton, Maulden, Millbrook, Milton Ernest, Northill, Pavenham, Potton, Pulloxhill, Renhold, Riseley, Sandy, Souldrop, Southill, Stevington, Thurleigh, Tingrith, Toddington, Woburn and Wootton, Copies of the transcribed registers for the county are available from the Bedfordshire Archives: see <https://bedsarchives.bedford.gov.uk/Guide-to-collections/FamilyHistory/BedfordshireParishRegisterSeries.aspx> [accessed 9 November 2021].

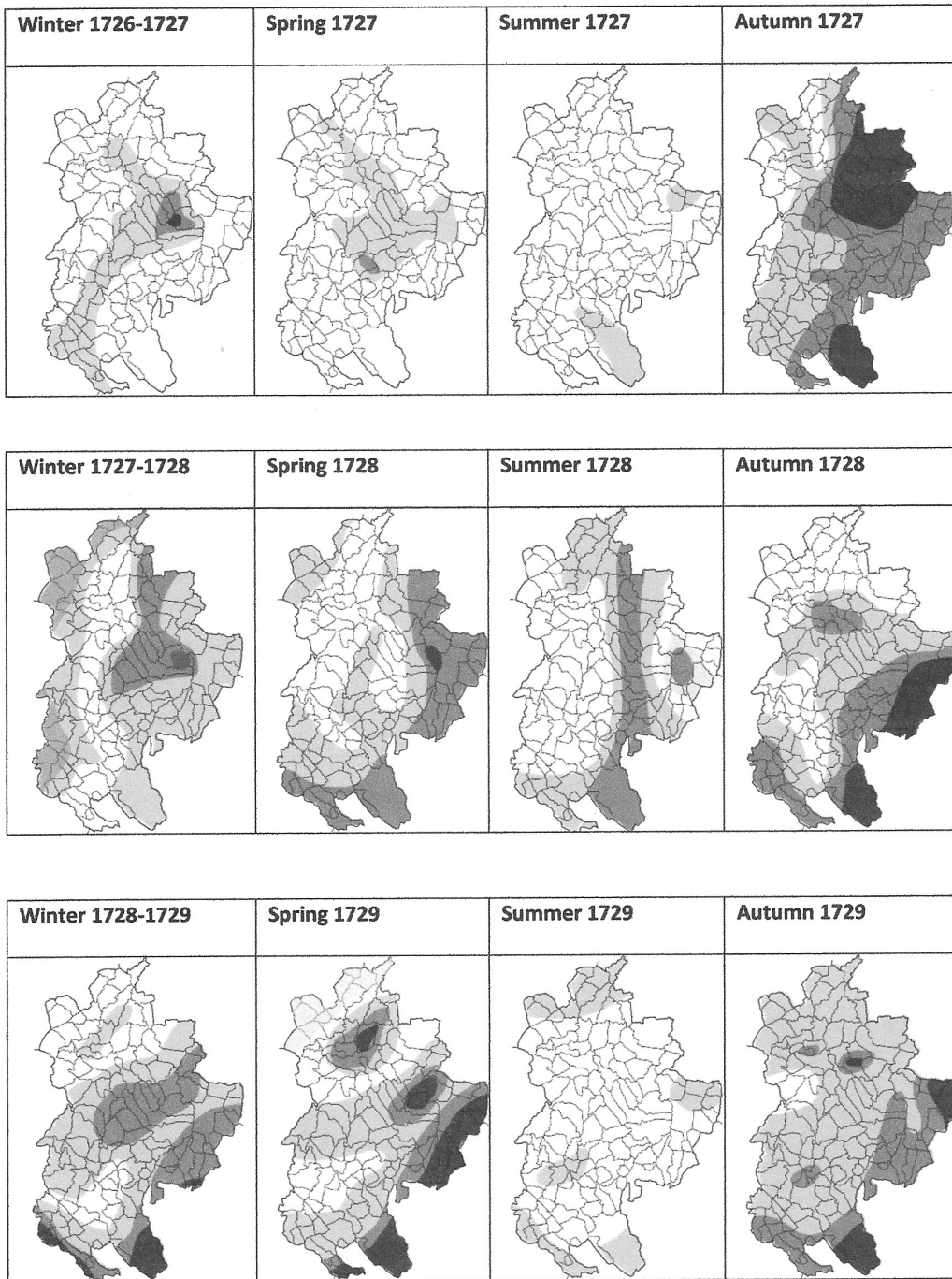
mortality rate per 100,000 population varied from the average non-crisis period mortality rate across Bedfordshire.<sup>31</sup>

The characteristic wave motion of the epidemic indicates that the 1727–1731 demographic crisis was not a single event with an easily defined start and end but rather a series

31 Burial registration data are organised within a parish structure and this represents the smallest unit at which crude death rates can reasonably be represented. Parish crude death rates provide point locations and are all that are available to map spatial variation. Examining changes in these rates across a large area therefore relies upon the generation of isopleths to interpret crude death rates spatially between two known control points. A simple method of linear interpolation was used to determine the form of the isopleths based upon the triangulated irregular network method. This requires each known data point to be connected to two other known points to form a triangle. Each line between two known control points is interpolated so that points on the line can be connected to other interpolated points of the same value. Interpolating values across areas where there are no data available does allow for a qualitative assessment of the spatial variation of crude death rates but has some inherent limitations, not least of which is the assumption that crude death rates change in a linear manner. Interpolation relies upon the number and distribution of control points as well as the skill and experience of the interpolator. Despite this, it allows for a graphical representation of gradually changing values and spatial patterns across Bedfordshire and is particularly useful in illustrating these changes over time.

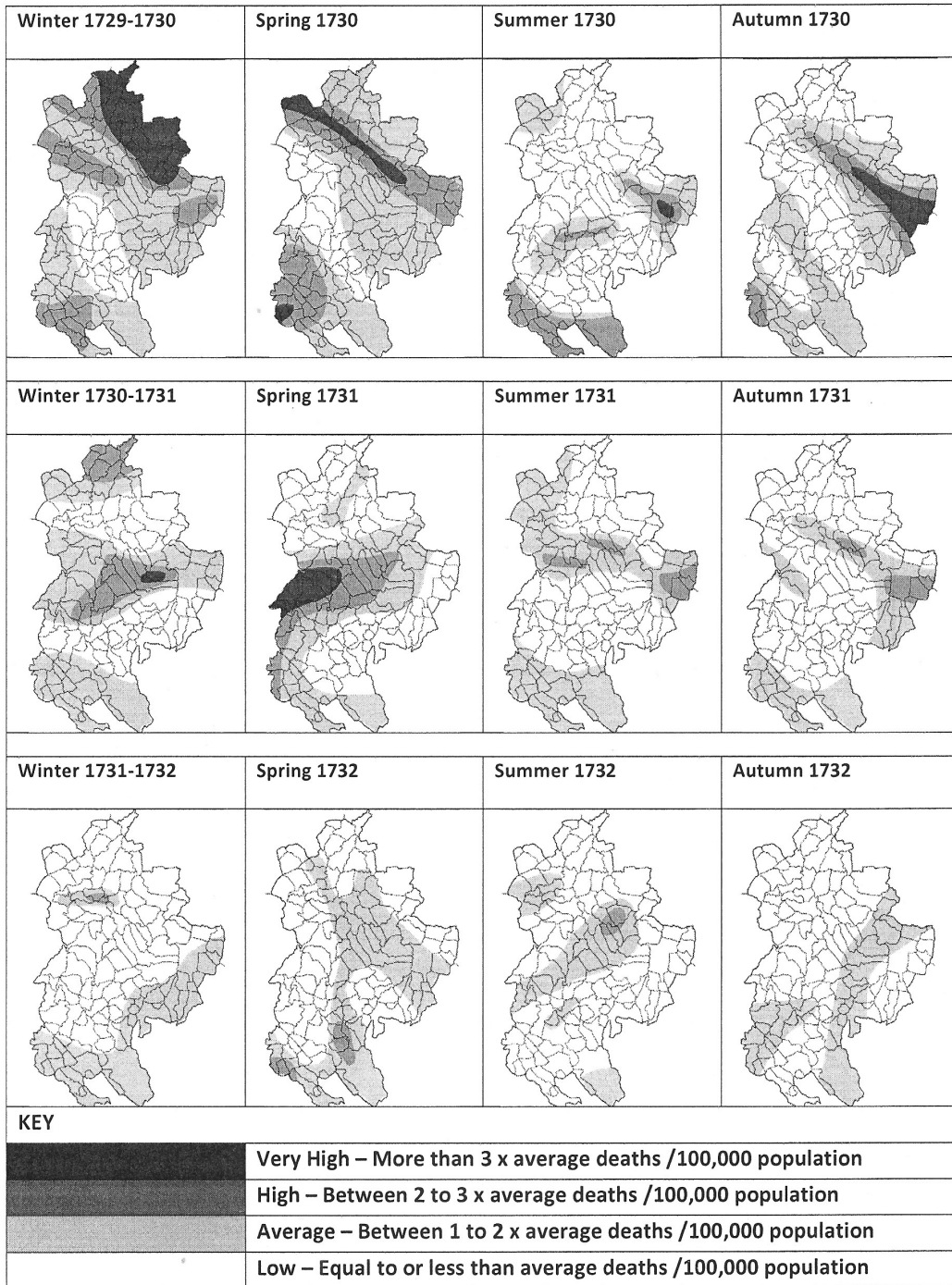


Figure 3 Isopleth plots showing seasonal changes in the geographical and temporal spread of mortality in Bedfordshire from winter 1726–1727 to autumn 1732



## The Bedfordshire Demographic Crisis of 1727–1731

Figure 3 *Continued*



of overlapping demographic crises caused by the spread of epidemic disease. The epidemic struck the eastern side of the county in the autumn of 1727, ending a pattern of seasonally low mortality. While there were small local outbreaks throughout 1728, the year saw levels of mortality start to fall until the autumn when another sharp rise in deaths hit the east of the county where it largely remained over the course of the following two seasons until, by the summer of 1729, mortality rates fell to below average levels. The respite was temporary, as death rates once more started to rise, with an epicentre settling over the north of the county in the winter of 1729–1730. In the course of the following year the levels of mortality waxed and waned, with high mortality migrating to eastern Bedfordshire in the autumn of 1730, before settling across western Bedfordshire in the spring of 1731. This represented the effective end of the mortality crises as deaths started to fall back to pre-crisis levels.

The impact of the 2020–2021 Covid pandemic has demonstrated that a previously unknown disease, superficially sharing many of the characteristics of historical epidemics has the capacity to spread rapidly; therefore, ascribing a definitive cause to any historical epidemic is a challenge and the Bedfordshire crisis is no exception. Diseases such as small-pox can be identified with some degree of confidence, as they were distinctive and widely recognised, while other causes have to be inferred from characteristic symptoms, patterns of seasonality or their selective mortality.<sup>32</sup> Interpreting causes of death in an era before modern medicine can present significant obstacles, particularly when ‘fever’ was a commonly used categorisation; for example there is a single description of symptoms relating to Bedfordshire, recorded in the diary of Benjamin Rogers, that is neither representative of the local timing nor the seasonality of mortality. The symptoms are ambiguous with few clues as to the cause, with Rogers describing a recurring fever accompanied by vomiting that lasted from September 1730 until January 1731.<sup>33</sup> While he could potentially have suffered from typhus, which shares many of the characteristic symptoms of Rogers’ condition, it is more probable that he was suffering from malaria. His parish is located on the banks of the River Ouse, where the water flows slowly through fertile meadows with flat vegetable margins and which was widely known as being an area where malaria was endemic.<sup>34</sup> His situation seems atypical, since Figure 3 shows no pattern of mortality that can be directly associated with the river. Rogers’ case, and our present experience, serve to highlight the complexity of attributing a cause to the mortality.

Contemporary accounts of the crisis abound, which range from William Hillary’s description of an outbreak of fever, probably typhus, in Yorkshire during the autumn of 1727 characterised by ‘a very particular nauseous stinking smell, very disagreeable to both the sick themselves and their attendance’, to Huxham’s descriptions of an enteric infection,

---

32 J. Nelson, ‘Mortality crisis in mid-Sussex 1606–1640’, *Local Population Studies* 46 (1991), pp. 39–49, here at p. 44.

33 Rogers, *Diary of Benjamin Rogers*, pp. 21–3.

34 J. Macculloch, *Malaria: an Essay on the Production and Propagation of this Poison, and on the Nature and Localities of the Places by Which it is Produced* (London, 1827), p. 2.

possibly typhoid with its bloody dysentery which ‘was greatly urgent indeed ... fatal to some’, in Plymouth during the summer of 1729. Overlying and, in many ways complicating the picture, were the recurrent outbreaks of influenza that periodically swept the nation.<sup>35</sup> Accounts such as these suggest that the dominant infections circulating during 1727–1731 were typhus, typhoid, influenza and malaria, each of which produces a fever as a characteristic symptom and has a seasonal component. Seasonality is evident in Figures 2 and 3, which reveal peaks in mortality in the autumn of 1727, the autumn and winter of 1728–1729 and the winter of 1729–1730. While there are few definitive rules, a rise in mortality during the warmer months can generally be attributed to enteric infections such as dysentery, cholera and typhoid, which are associated with insanitary conditions, human-faecal contact, and infected food and water supplies.<sup>36</sup> Influenza was a recognised respiratory infection with a known propensity for increasing mortality rates during the late autumn and winter.<sup>37</sup> Typhus relies on an insect vector but does not follow the typical summer pattern for insect-related infections. The vector, a body louse, spends its life attached to its host and so is unaffected by external environmental conditions. It tends to spread during the winter and spring when infected people live in close proximity.<sup>38</sup>

### Was there a famine component to the Bedfordshire crisis?

There is a wealth of evidence to suggest the driving force of the crisis was related to the spread of disease, but in a complex and dynamic system the role of famine cannot be dismissed without detailed analysis.<sup>39</sup> There is consensus that England was largely free of famine by the mid seventeenth century and any episodes of dearth tended to be localised events.<sup>40</sup> The bad harvests of 1727–1728, coinciding with a rise in mortality levels and increased food prices are considered by some researchers to be positive proof of a Malthusian crisis.<sup>41</sup> Appleby extended this idea, proposing a number of criteria as a test for famine-related crisis mortality including a distinctive mortality pattern, fewer conceptions

---

35 There are many contemporary accounts available among which are W. Hillary, *A Practical Essay on the Small-pox* (London, 1740), p. 10 and J. Huxham, *Observations on the Air and Epidemic Diseases from the Year MDCCXXVIII to MDCCXXXVII Inclusive* (London, 1759), pp. 39–41. Early eighteenth century physicians had yet to differentiate typhus and typhoid and the retrospective attribution of specific infections to contemporary descriptions is based upon current levels of medical knowledge. See M. Dobson, *Contours of Death and Disease in Early Modern England* (Cambridge, 1997), p. 39.

36 Wrigley and Schofield, *Population History of England*, p. 305.

37 F. Hull, ‘Momento mori or Dr. Cliff’s diary, an unusual demographic document’, *Archaeologia Cantiana* 89 (1974), pp. 11–23, here at p. 19.

38 M. Dobson, *Contours of Death and Disease*, p. 462.

39 In this paper the term ‘famine’ is taken to mean a situation where there is not enough food for people over a wide area, resulting in illness and death. ‘Dearth’ has been given a more local meaning and refers to food shortages over a localised area. For those lacking food the distinction between the two terms is of little relevance.

40 G. Alfani and C. ÓGráda, ‘The timing and causes of famines in Europe’, *Nature Sustainability* 1 (2018), pp. 283–8, here at p. 285, <https://doi.org/10.1038/s41893-018-0078-0>.

41 W.G. Hoskins, ‘Harvest fluctuations and English economic history, 1620–1759’, *Agricultural History Review* 16 (1968), pp. 15–31, here at p. 16.

and the existence of contemporary accounts mentioning famine or food shortages.<sup>42</sup> The first criterion can be dispensed with quickly. Figure 3 shows the pulsing of mortality across the county characteristic of epidemic rather than famine-related mortality affecting a wide area. Parishes within a few miles of each other could have vastly different experiences. In the summer of 1730 Biggleswade parish suffered high levels of mortality, perhaps due to a localised outbreak of typhoid or other enteric infection, while the adjacent parish of Southill was unaffected, experiencing a death rate below average levels.

It has not proved possible to identify any markers for famine in parish records by examining the relationship between conceptions and deaths, based on the assumption that women either made conscious decisions not to bear children during times of dearth or that malnutrition adversely affected their fertility.<sup>43</sup> Calculating the date of conception is not possible with any degree of accuracy when working with parish baptism records, for while there was often a short time interval between birth and baptism this was not always the case, despite the Anglican Church stipulating a maximum gap of 14 days.<sup>44</sup>

Jonathan Healey's observation that no English commentators of the time described the 1727–1731 crisis as a famine is valid.<sup>45</sup> Within an abundance of evidence the attribution of the crisis to dearth or famine is lacking, suggesting that either it was known about but was seen as a controversial issue with discussion discouraged, or simply that it did not exist or went unrecognised. The absence of documentary evidence of famine does not, however, provide evidence of absence. The story of the time has to be an exercise in reconstruction, which entails the extraction of meaning from the smallest fragment of information—a newspaper account, an entry in a parish burial register or an official government record—and only then can a better understanding of the role of famine, if indeed there was one, be understood. Famine was a familiar concept, easily recognised and already present in Ireland, where the years 1725–1729 were marked by a calamitous confluence of crop failures, starvation, rampant beggary and large-scale emigration.<sup>46</sup> Arguably, England had its own problems: in 1727 there was a partial crop failure and a poor harvest, which was replicated in 1728, and as a net exporter of grain, the crop failures produced a national shock.<sup>47</sup> Benjamin Rogers noted the reason for this in his diary: '[i]t has been the sharpest and

---

42 A.B. Appleby, *Famine in Tudor and Stuart England*, (Stamford, 1978), pp. 116–8.

43 M. Drake, 'From old bills to sick pigs: our ways to capture community', *Family and Community History* 1 (1998), pp. 7–26, here at p. 16, <https://doi.org/10.1179/fch.1998.1.1.002>.

44 The register of baptisms for Ampthill covering the period 1692–1706 records 318 entries for which the date of birth is also recorded. These show that 83 per cent of baptisms were of individuals less than the 14 days of age stipulated by the church; however, the presence of outliers, such as the baptism of James Freeman in 1699, 331 days after his birth, presents difficulties in assessing fecundity during a period of potential dearth, even if it is accepted that the results from Ampthill are representative of the county and that there was no change in the interval between birth and baptism between the last record of a date of birth in the Ampthill baptism register in 1706 and the start of the mortality crisis in 1727.

45 J. Healey, *The First Century of Welfare: Poverty and Poor Relief in Lancashire 1620–1730* (Woodbridge, 2014), p. 253.

46 K.E. Sundell, 'The "dangerous authors": Dublin's economic pamphleteers, 1727–1732' (unpublished PhD thesis, University of Notre Dame, Indiana, 2002), p. 172.

47 T.S. Ashton, *Economic Fluctuations in England 1700–1800* (Oxford, 1959), p. 18.

longest Winter that has been known for a great many Years'.<sup>48</sup> The price of wheat soared from 42 to 54 shillings per quarter during the years of bad harvest causing local shortages.<sup>49</sup> This sparked localised events of civil disorder in Cornwall and North Wales but Bedfordshire appears to have been unaffected, possibly because, as a grain producing area, any shortages were less apparent than other areas and there is no evidence to suggest that there was widespread dearth, indeed there is not a single mention of dearth, disorder or crime of any significance in Rogers' diary. The Riseley parish registers record some deaths that could be attributed to malnutrition: Elizabeth Gore, who 'died of want' in March 1710; James Burge who was 'eaten up of lice' in June 1720 and Elizabeth Powel who is listed as succumbing to scurvy in June 1722, but none occurred during the crisis.<sup>50</sup> If Riseley's experience is typical for the county, and there is no reason to suspect from Figure 3 that it is not, there is no evidence of either a widespread famine or a localised dearth playing any role in the Bedfordshire demographic crisis.

### Evidence for socially selective mortality

While there are a number of contemporary accounts that detail the spread and symptoms associated with the crisis, there is an absence of detailed discussion about the impact on those of advanced years. Sir Richard Manningham's brief observation that deaths from fever between 1726 and 1730 were 'particularly dangerous to delicate persons and those in the decline of life' is typical of several contemporary accounts that hint at an epidemic disproportionately affecting the elderly, yet which provide no substantive evidence.<sup>51</sup> The eighteenth-century attitude to ageing presents a problem in assessing whether the crisis was socially selective, since old age was a flexible concept that was not legally defined. While manual workers could be classed as elderly when they were aged 50 years, it was generally accepted that, for official purposes, 60 years might mark the age at which old age commenced.<sup>52</sup> The lack of codification lent the subject of ageing an air of subjectivity with the classification depending as much on perception as it did on reaching a specific birthday. Some people self-defined as elderly, while others had the designation pressed upon them by reason of their appearance, physical debilitation or the roles they occupied within the community.<sup>53</sup> It is true that many epidemic diseases can be characterised by an age-related differential impact; however, between 1720 and 1729 only 1 per cent of burials recorded the age of the deceased and, even then, largely when death was due to old age, so an alternative

---

48 Rogers, *Diary of Benjamin Rogers*, p. 8.

49 E.J. Lowe, *Natural Phenomena and Chronology of the Seasons; being an Account of Remarkable Frosts, Droughts, Thunderstorms, Gales, Floods, Earthquakes, etc. Also Diseases, Cattle Plagues, Famines, etc. which have Occurred in the British Isles Since A.D. 220, Chronologically Arranged* (London, 1870), p. 45.

50 Emmison, *Bedfordshire Parish Registers: Riseley*, p. 239.

51 R. Manningham, *The Nervous or Hysterical Fever; the Fever on the Spirits; Vapours, Hypo, or Spleen* (London, 1760), p. 16.

52 P. Thane, *Old Age in English History* (Oxford, 2000), pp. 24–6

53 S.R. Ottaway, *The Decline of Life: Old Age in Eighteenth Century England* (Cambridge, 2004), p. 17.

**Table 2 Adult and child deaths in rural and urban parishes, Bedfordshire, 1720–1740**

	1720–1726; 1732–1740 Non-crisis years					1727–1731 Crisis years				
	Adult deaths	Adult %	Child deaths	Child %	Annual crude death rate (per thousand)	Adult deaths	Adult %	Child deaths	Child %	Annual crude death rate (per thousand)
Rural parishes (villages)	2,524	58.1	1,819	41.9	28.6	1,313	64.6	719	35.4	63.6
Urban parishes (towns)	3,081	57.4	2,287	42.6	35.4	1,326	57.0	1,000	43.0	72.8
Total	5,605	57.7	4,106	42.3	64.0	2,639	60.6	1,719	39.4	136.5

**Source:** Burial registers of Ampthill, Bedford St Mary, Bedford St Peter, Biggleswade, Blunham, Bolnhurst, Chalgrave, Clophill, Cranfield, Dunstable, Felmersham, Flitwick, Goldington, Harlington, Kempston, Leighton Buzzard, Luton, Maulden, Millbrook, Milton Ernest, Northill, Pavenham, Potton, Pulloxhill, Renhold, Riseley, Sandy, Souldrop, Southill, Stevington, Thurleigh, Tingrith, Toddington, Woburn and Wootton, Copies of the transcribed registers for the county are available from the Bedfordshire Archives: see <https://bedsarchives.bedford.gov.uk/Guide-to-Collections/FamilyHistory/BedfordshireParishRegisterSeries.aspx> [accessed 9 November 2021].

method of approximating age is required.<sup>54</sup> A relatively crude method uses parish burial registers to identify adults and children by assuming a child is any person listed as an infant or given the status of a son or daughter. All other individuals, in the absence of evidence to the contrary, are assumed to be adults. This method does have limitations including the incorrect classification, for example, of adult children who had yet to establish their own homes, but these are likely to be limited in number and, while there will be some adults incorrectly classified as children, the effect will, to some extent, be ameliorated by children incorrectly classified as adults.<sup>55</sup>

Applying this method to the parish register data allows an estimate of the ratio of adult to child deaths for the crisis period 1727–1731 against the non-crisis years between 1720 and 1740. Table 2 demonstrates that children accounted for around two in every five deaths. In urban areas the proportion of child deaths remained relatively constant, suggesting that the epidemic affected adults and children equally. The reduction in the proportion of childhood deaths seen in rural parishes between 1727 and 1731 is statistically significant and is worthy of further consideration. In the non-crisis periods 1720–1726 and

54 G. Newton, *Data Mining Family History Society Burials*, Cambridge Working Papers in Economic and Social History 34 (Cambridge, 2019), p. 23. Available online at <https://doi.org/10.17863/CAM.40869> [Accessed 14 May 2021].

55 E.A Wrigley (ed.), *An Introduction to English Historical Demography from the Sixteenth to the Nineteenth Century*, (London, 1966), p. 71.

## The Bedfordshire Demographic Crisis of 1727–1731

---

1732–1740, there were an average of 114 childhood deaths per annum in the rural parishes which rose to 144 deaths per annum during the crisis period. Rural adult deaths rose from an average of 158 per annum in non-crisis years to 263 during the crisis, and this larger proportional rise in adult deaths had the effect of reducing the proportion of child deaths. Whereas Healey identified the Lancashire mortality crisis of 1727–1730 as being driven by adult deaths, the evidence is less sharply defined in Bedfordshire as a whole, although it could be suggested that the same pattern can be observed in rural parishes.<sup>56</sup>

In contrast to the richness of its parish registers, Bedfordshire has no contemporary account of the crisis beyond Rogers' diary and certainly nothing that directly addresses social selectivity, though Benjamin Rogers did occasionally record burials of interest. In March 1732 he noted: 'I Buried William Whish, Butcher, who died of a violent fever. *Desinat*.'<sup>57</sup> Parish records allow Whish's baptism to be traced to June 1668 in Carlton, Bedfordshire.<sup>58</sup> His death, at 64 years of age, appears supportive of the correlation between age and death but it is a happenstance event that is not of itself persuasive, since fever was a common cause of death and not always related to epidemics. The burial register of Riseley parish is, however, of value in examining this key question. The vicar, John Harding, recorded the cause of 701 deaths in the parish between 1690 and 1742, which allows for a more detailed analysis of those who died from fever between 1727 and 1731. Fever was the commonest cause of death and was responsible for a sharp rise in mortality between 1727 and 1730, which was accompanied by an outbreak of whooping cough in 1727 and two small outbreaks of dysentery in 1729 and 1730. Between 1727 and 1731 there were 39 deaths attributed to fever for which the name of the decedent is known. Using a simple family reconstitution technique, the births of decedents were traced using marriage and birth registers.<sup>59</sup> Figure 4 shows the principal causes of death in Riseley during the period 1720–1740.

If death had no age-related socially selective component the number of deaths should be in proportion to the size of the population for each age group. Figure 5 shows that despite the relatively small size of the sample, representing just 9.4 per cent of the Riseley population, there is a statistically significant link between age and deaths from fever with 71.8 per cent of those succumbing during epidemic years being aged 40 years or older, despite this age range representing only 31.3 per cent of the population. Those aged 10–30 years had a significantly reduced likelihood of dying from fever relative to other age groups with actual death rates over 60 per cent less than predicted levels. Exposure to increased levels of risk occurs after the age of 40 with individuals dying at twice the predicted rates. The study is limited by the small sample size, but the results appear to support an analysis of 3,515 deaths from fever recorded in the London Bills of Mortality for a nine-week

---

56 Healey, 'Socially selective mortality' p. 63.

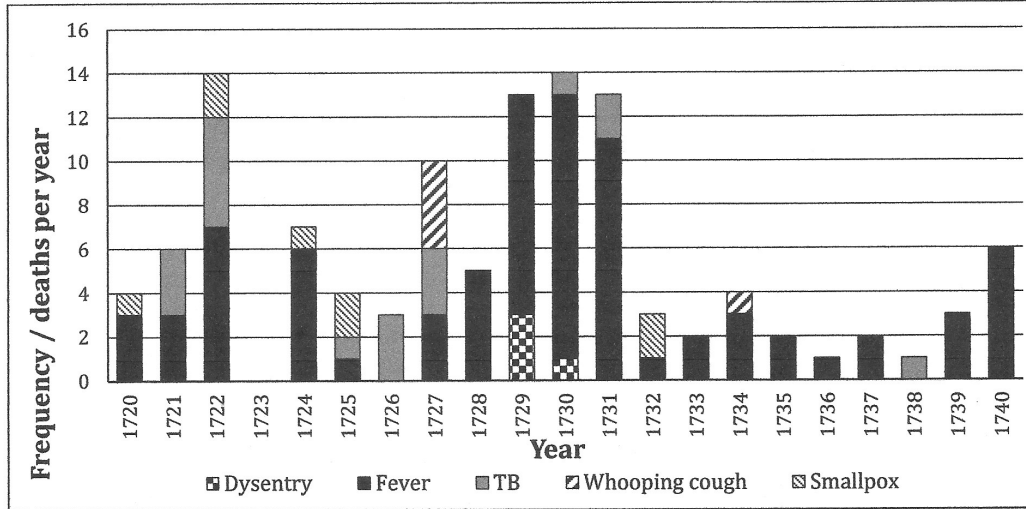
57 Rogers, *Diary of Benjamin Rogers*, p. 33.

58 F.G. Emmison (ed.) *Bedfordshire Parish Registers, Volume 34: Carlton 1554–1812* (Bedford, 1946), p. B6.

59 S. King, 'Historical demography, life-cycle reconstruction and family reconstitution: new perspectives', *History and Computing* 8 (1996), pp. 62–77, here at p. 70.



Figure 4 Principal causes of death in Riseley, 1720–1740



**Source:** Riseley parish register. Copies of the transcribed registers for the county are available from the Bedfordshire Archives: see <https://bedsarchives.bedford.gov.uk/Guide-to-collections/FamilyHistory/BedfordshireParishRegisterSeries.aspx> [accessed 9 November 2021].

period in 1729, which also showed the proportion of deaths from fever increasing with age. In London, those under the age of 30 had a reduced risk of death relative to expected mortality levels, while those over 60 were almost twice as likely to die when compared to their expected mortality rates.<sup>60</sup> The reasons for these relationships, observed in London and in Bedfordshire at the same time and probably as a result of the same infection, cannot be ascertained from the available data but could relate to the increased likelihood of older age groups suffering from underlying health conditions that inhibited or impeded individuals’ chances of recovery rather than an increase in the virulence of the infection or a reduction in the effectiveness of an individual’s immune system.<sup>61</sup>

Bedfordshire was, and remains, a largely rural county without a city so any discussion of the differential impact of disease in urban and rural settings requires a degree of interpretation. Adams, in his *Index Villaris*, and Defoe on his travels identified a number of towns in the county, though it is clear that the defining characteristic was not population size, since Ampthill with 599 residents was classed as a town, whereas the nearby settlement of Maulden, also with 599 residents, was considered a village.<sup>62</sup> In fact, the villages of

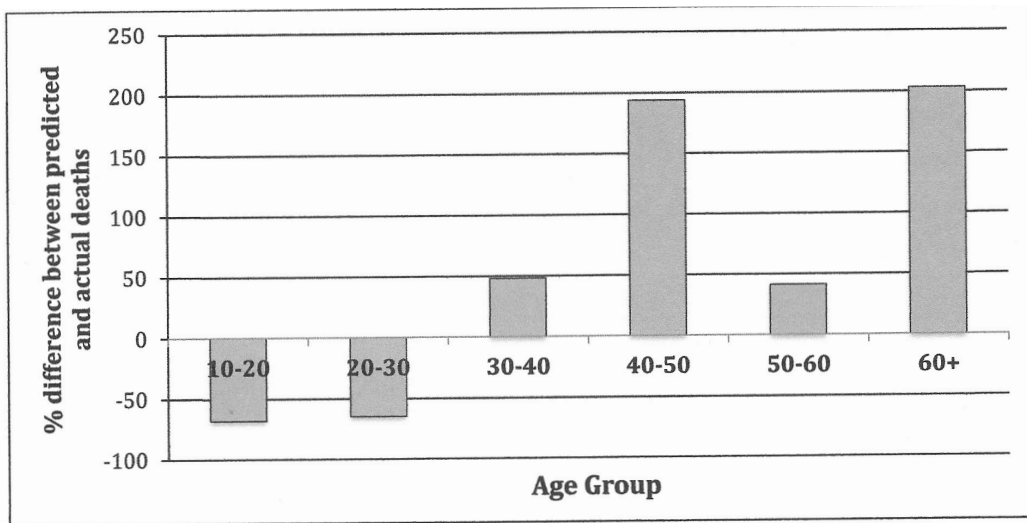
60 J. Brownlee, ‘The health of London in the eighteenth century’, *Proceedings of the Royal Society of Medicine* 18 (1925), pp. 73–85, here at p. 84.

61 M.A. Garbati, S.F. Fagbo, V.J. Fang, L. Skakni, M. Joseph, T.A. Wani, B.J. Cowling, M Peiris and A. Hakawi, ‘A comparative study of clinical presentation and risk factors for adverse outcome in patients hospitalised with acute respiratory disease due to MERS, coronavirus or other causes’, *PLoS One* 11 (2016), e0165978, <https://doi.org/10.1371/journal.pone.0165978>.

62 See Adams, *Index Villaris*; and Defoe, *Tour Thro’ the Whole Island of Great Britain*.

## The Bedfordshire Demographic Crisis of 1727–1731

Figure 5 Predicted versus actual deaths, Riseley, 1727–1731



**Note:** Population figures are derived from a back projection of 1696 data in E.A. Wrigley and R.S. Schofield, *The Population History of England, 1541–1871 a Reconstruction* (London, 1981), p. 218.

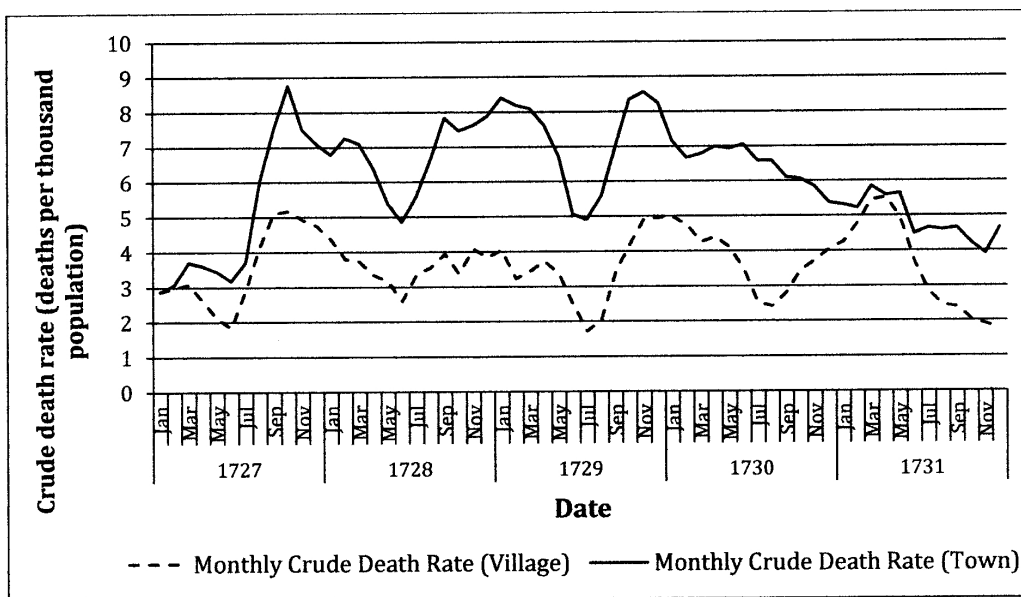
**Source:** Riseley parish register. Copies of the transcribed registers for the county are available from the Bedfordshire Archives: see <https://bedsarchives.bedford.gov.uk/Guide-to-Collections/FamilyHistory/BedfordshireParishRegisterSeries.aspx> [accessed 9 November 2021].

Cranfield, Kempston, Sandy and Toddington, with populations between 736 and 781, were larger than the majority of towns. While there was not a fixed definition of a town the evidence suggests that status was dependent upon several different factors including a near monopoly of services, the presence of courts and the building of turnpike roads.<sup>63</sup>

There is little doubt that mortality rates in towns were significantly higher than in rural parishes. During the crisis period towns suffered 53.4 per cent of all deaths despite containing only 40.3 per cent of the county's population. Figure 6 shows the monthly crude death rates for urban and rural parishes during the crisis and illustrates that throughout the period, and without exception, the crude death rate in urban areas always exceeded that of rural areas. Three distinct peaks in mortality can be particularly observed in urban areas, the first commencing during the autumn of 1727, the second peaking during the winter of 1728–1729 and the third peaking in the autumn of 1729. The pattern is broadly mirrored in rural areas though at significantly lower levels. In the spring of 1731, there was a large spike in mortality among those living in villages, affecting mainly adults, which was not replicated across populations living in towns. This accords with data presented in Figure 3, which reveals a period of crisis centred on the parishes of Cranfield, Wootton and

<sup>63</sup> Godber, *History of Bedfordshire*, pp. 328–9.

Figure 6 Monthly crude death rates in villages and towns, Bedfordshire, 1727–1731



**Source:** Burial registers of Amphill, Bedford St Mary, Bedford St Peter, Biggleswade, Blunham, Bolnhurst, Chalgrave, Clophill, Cranfield, Dunstable, Felmersham, Flitwick, Goldington, Harlington, Kempston, Leighton Buzzard, Luton, Maulden, Millbrook, Milton Ernest, Northill, Pavenham, Potton, Pulloxhill, Renhold, Riseley, Sandy, Souldrop, Southill, Stevington, Thurleigh, Tingrith, Toddington, Woburn and Wootton. Copies of the transcribed registers for the county are available from the Bedfordshire Archives: see <https://bedsarchives.bedford.gov.uk/Guide-to-Collections/FamilyHistory/BedfordshireParishRegisterSeries.aspx> [accessed 9 November 2021].

Kempston in the west of the county that did not touch any of the urban centres. In the absence of contemporary descriptions of symptoms identifying a cause is speculative but the seasonality suggests a localised outbreak of typhus.

It has long been recognised that there is a possible link between urban settings and the spread of disease, with Paul Slack, in his examination of plague, suggesting that relative vulnerability might be affected by the size of settlements and their transport links.<sup>64</sup> While the thrust of Slack’s argument may be correct—that vulnerability to disease increases in urban environments—this study has found no evidence of a direct link with either settlement size or transport routes. Several of the villages were larger than the majority of the towns and yet did not suffer the same mortality rates; similarly, transport networks in the area were poor with few miles of turnpiked road, and none of these appear associated with mortality patterns. Leslie Clarkson argued that a number of key factors acted in concert to facilitate high mortality rates in towns, chief among them being that the concentration of

64 P. Slack, ‘The local incidence of epidemic disease: the case of Bristol 1540–1650’, in Local Population Studies Society, *The Plague Reconsidered: a New Look at its Origins and Effects in 16th and 17th century England* (Matlock, 1977) p. 59.

people in a small space created the ideal conditions for the spread of disease, exacerbated because towns were dirtier than villages with tainted supplies of water and with inadequate methods of sewage disposal.<sup>65</sup> Little evidence has been identified that the enteric infections commonly associated with tainted water and inadequate sewage disposal were more prevalent in towns than villages across Bedfordshire; however there is evidence to support Clarkson's argument that higher concentrations of people drove increased infection rates.

While the degree of urbanisation in the early eighteenth century is not something that would necessarily be recognised in the modern era, Defoe's description of Bedford as:

a large, populous and thriving town, and a pleasant well-built place; [with] five parish churches, a very fine stone bridge over the Ouse and the High Street (especially) ... a very handsome fair street ... full of very good inns, and many of them

hints at elements which would be familiar to the modern observer: the opportunity for people to cluster in groups in public areas, either in taverns, shops, markets or courts, and a life increasingly lived in the public domain.<sup>66</sup> Bedford was not an isolated example, for this period saw the development of the market towns of Luton, Leighton Buzzard, Biggleswade, Woburn and Dunstable, driven by the relocation of craftsmen and which resulted in a near-monopoly of the auxiliary trades that were attracted to the centres of population.<sup>67</sup> It seems evident that these factors created a new vulnerability to the spread of disease that was driven by societal change, close physical human interaction and the transient nature of the population, moving in and out of the towns to make use of the facilities provided, a pattern recognised in the modern era, particularly during the 2020-2021 pandemic.<sup>68</sup> The evidence from parish registers does support an element of social selectivity based on geography, with towns suffering higher death rates during the crisis, though this does not tell the whole story. Outside of the crisis, death rates, though lower overall, were still 24 per cent higher in towns than in rural parishes, supporting the view that background mortality was naturally higher in market towns than in surrounding rural parishes due principally to their crowded nature.<sup>69</sup>

The link between death, age and geography is not unexpected given current knowledge of the effects of epidemics. Perhaps more interesting is Hillary's contention that 'many of the little country towns and villages were stripped of their poor people, over the northern parts of the kingdom'.<sup>70</sup> The language employed suggests that the poor suffered disproportionately and were, to all intents and purposes, selectively wiped out. Conventional thinking

---

65 L.A. Clarkson, *Death, Disease and Famine in Pre-industrial England* (London, 1975), pp. 9–10.

66 Defoe, *Tour Thro' the Whole Island of Great Britain*, Letter 7, part 2: East Midlands.

67 Godber, *History of Bedfordshire* p. 328.

68 J. Rocklov and H. Sjodin, 'High population densities catalyse the spread of COVID-19', *Journal of Travel Medicine* 27 (2020), taaa038, <https://doi.org/10.1093/jtm/taaa038>.

69 D. Connor and A. Hinde, 'Mortality in town and countryside in early modern England', *Local Population Studies* 89 (2012), pp. 54–67, here at pp. 56, 65, <https://doi.org/10.35488/lps89.2012.54>.

70 Hillary, *Practical Essay on the Small-pox*, p.16.

is that there is a link between poverty and epidemic outbreaks, with a combination of dearth, morbidity and the interruption of trade being the driving forces.<sup>71</sup> Hillary's observation seemingly turns this approach on its head with the epidemic having a primary impact on death rates through direct targeting of the poor, rather than a secondary effect, for example by causing food shortages. Occupational data recorded in parish registers have the potential to provide information that allows Hillary's observation to be tested, subject to the qualification that the registers have some limitations, the most significant of which is their failure to record the details of female occupations. A woman's contribution to the household economy was indispensable and, because women were excluded from most of the skilled trades, they were almost by definition confined to semi-skilled or unskilled work.<sup>72</sup> Their essential role within the overall workforce can be gauged from the words of a local poet Nicholas Rowe, who noted that, in southern Bedfordshire during the early eighteenth century, the traditional occupation of spinning was superseded by the development of straw plaiting and straw hat manufacture. In an address to the women in the county he noted that: 'thus trades increase, the poor are daily fed and thousands get their living by the head'.<sup>73</sup> It is likely that many of the remaining women worked in the agricultural sector, with the frontispiece of Nathan Bailey's 1736 *Dictionarium Domesticum* illustrating a woman actively involved in animal husbandry and dairy work.<sup>74</sup> Keith Snell's study of female workers in the agricultural sector of Bedfordshire between 1690 and 1750 provides support for the veracity of Bailey's depiction by demonstrating a seasonal employment pattern typical of grain growing areas, characterised by high employment during the harvest followed by high unemployment over winter.<sup>75</sup> The problem faced in this paper is that parish registers are silent on the occupational role of women and, at best, they are described by reference to their familial relationships as daughter, wife, mother, widow or single-woman. While any subsequent analysis of the differential impact of the epidemic on different occupational groups presents an incomplete picture, it is worth noting that there is no significant difference in mortality rates between men and women and so any conclusions drawn in relation to men may well apply to women in similar occupational sectors.

A second significant limitation is that, in the early eighteenth century there was no obligation on clergy to record occupational data and, nationally, only 11 per cent did so.<sup>76</sup> Bedfordshire was well served and all 35 of the parishes surveyed had occupational data recorded, albeit only for men, with 24 of the parishes having a complete record covering

---

71 A.J. Gritt, 'Mortality crisis and household structure: an analysis of parish registers and the Compton census, Broughton, Lancashire, 1667–1676', *Local Population Studies* 79 (2007), pp. 38–65, here at p. 54.

72 K. Wrightson, *Earthly Necessities* (London, 2002), pp. 308–10.

73 N. Rowe, *A Poetical Address to the Ladies of Bedfordshire* (London, 1774), p. 25.

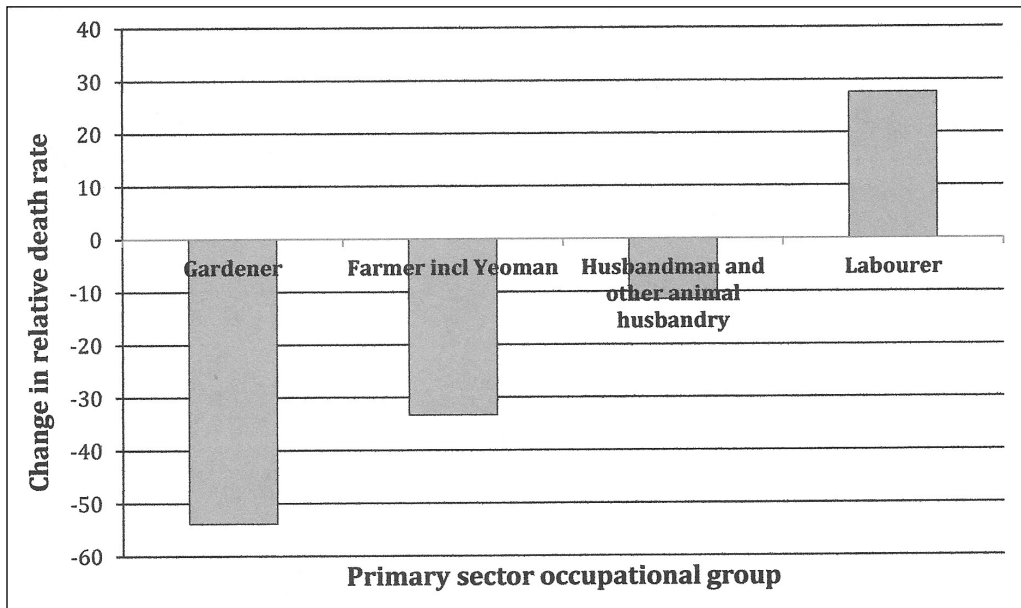
74 N. Bailey, *Dictionarium Domesticum* (London, 1736), Frontispiece.

75 K.D.M. Snell, *Annals of the Labouring Poor: Social Change and Agrarian England 1660–1900*, 3rd edn (Cambridge, 1995), pp. 19–21.

76 S.A.J. Keibek, 'The male occupational structure of England and Wales, 1600–1850' (unpublished PhD thesis, University of Cambridge, 2016), p. 18.

## The Bedfordshire Demographic Crisis of 1727–1731

Figure 7 Change in relative death rate for primary sector occupations during the 1727–1731 mortality crisis in Bedfordshire



**Source:** Burial registers of Ampthill, Bedford St Mary, Bedford St Peter, Biggleswade, Blunham, Bolnhurst, Chalgrave, Clophill, Cranfield, Dunstable, Felmersham, Flitwick, Goldington, Harlington, Kempston, Leighton Buzzard, Luton, Maulden, Millbrook, Milton Ernest, Northill, Pavenham, Potton, Pulloxhill, Renhold, Riseley, Sandy, Souldrop, Southill, Stevington, Thurleigh, Tingrith, Toddington, Woburn and Wootton, Copies of the transcribed registers for the county are available from the Bedfordshire Archives: see <https://bedsarchives.bedford.gov.uk/Guide-to-Collections/FamilyHistory/BedfordshireParishRegisterSeries.aspx> [accessed 9 November 2021].

the period from 1720 to 1740. Of the 4,086 male adult deaths recorded, 2,559 (62.6 per cent) were accompanied by occupational information.

The occupations recorded in parish burial registers were not self-defined. They were ascribed by the clergy or the parish clerk based upon personal knowledge or information supplied by a third party and so their reliability needs to be questioned. There were clearly some differences in parish nomenclature typified by the designation of those whose occupation was selling ale, who are variously described as ‘ale men’, ‘ale drapers’, ‘ale keepers’ and ‘ale sellers’. Such difficulties in occupational categorisation were overcome by using Wrigley’s primary, secondary and tertiary (PST) classification. Primary occupations are those relating to the production of raw materials; the secondary sector relates to the conversion of raw materials into finished products; and the tertiary sector includes almost all other occupations.<sup>77</sup> The principal benefit of this approach is that there are two further

<sup>77</sup> E.A. Wrigley ‘The PST system of classifying occupations’, p. 9. Available online at: <https://www.campop.geog.cam.ac.uk/research/projects/occupations/britain19c/papers/paper1.pdf> [Accessed 14 May 2021].

unspecified sector groupings relating to general workers and labourers, and those without an occupation, including the poor.<sup>78</sup> This allows the impact of the crisis on those at the economic margins of society—the labouring poor and the traditional poor—to be assessed separately. Figure 7 shows the change in the relative death rate during the 1727–1731 mortality crisis based on the male primary occupations recorded for the period 1720–1740.

Labourers represented the largest male occupational category in Bedfordshire with 26.4 per cent of all recorded occupations falling into this group, almost all of whom worked within the primary sector in seasonal agricultural roles.<sup>79</sup> Immediately apparent is that labourers had a significantly higher death rate during the crisis, being almost 30 per cent more likely to die than in a non-crisis period. This pattern was not replicated across the agricultural sector since other occupational groups showed a decrease in death rates measuring over 10 per cent for those involved in animal husbandry and over 30 per cent for farmers and yeomen, a pattern also observed in Lancashire.<sup>80</sup> If the explanation for the higher death rates is not as simple as the nature of the work undertaken by individuals, another reason must be sought and the likely causative factor is wealth. Labourers were among the poorest of occupational groups, and while little evidence remains relating directly to Bedfordshire, the analysis of inventories in Shropshire revealed that they left estates with an average value of £24, compared to £175 for other agricultural workers and £414 for drapers.<sup>81</sup> The Shropshire inventory data, when used as a representative proxy for Bedfordshire, allows the relative change in death rates for various occupations to be plotted against a measure of wealth (Figure 8).<sup>82</sup>

Real data drawn from a variety of sources and subject to the limitations already outlined will never produce a perfect correlation; nevertheless, the trend line shows a strong association between increasing levels of wealth and decreasing susceptibility to epidemic-related mortality. With the exception of butchers, those occupations with a median inventory value of more than £50 had a reduced risk of dying during the crisis of between 30–80 per cent compared to non-crisis years. Conversely, those with a median inventory value of less than £50 saw their chances of dying increase by up to 30 per cent.

The question remains: why should penury increase the risk of epidemic-related death among the labouring poor? Edmund Burke's contention, albeit expressed decades after the crisis, was that the sheer number of labourers resulted inevitably in poverty: '[i]n a fair distribution among the vast multitude, none can have much'.<sup>83</sup> This was certainly true for access to housing stock, where demand exceeded supply, resulting in over half of village

---

78 Wrigley 'The PST system', p. 17.

79 Keibek, 'Male occupational structure', p. 69

80 E.M. Edwards, 'Crisis in Lancashire: a survey of the 1720s demographic crisis' (unpublished MA thesis, University of Central Lancashire, 2009), p. 77.

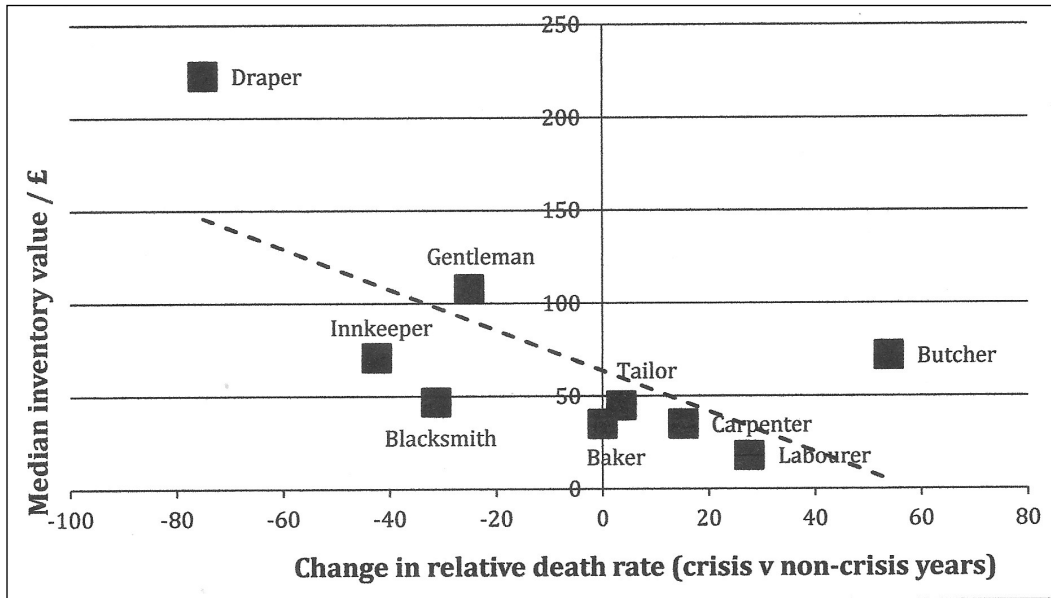
81 R.A. Churchley, 'Differing responses to an industrializing economy: occupations in rural communities in the heart of England from the restoration to the railway age c.1660–c.1840', (unpublished PhD thesis, University of Birmingham, 2010), p. 362.

82 The survival of Bedfordshire probate inventories is poor and is partially accounted for by the tradition that they were used as kindling for the fire in the Archdeacon's registry.

83 E. Burke, *Thoughts and Details on Scarcity* (London, 1800), p. 2.

## The Bedfordshire Demographic Crisis of 1727–1731

Figure 8 Change in relative death rates during the 1727–1731 mortality crisis in Bedfordshire, by occupation and relative wealth



**Note:** Median inventory values from R. A. Churchley, 'Differing responses to an industrializing economy: occupations in rural communities in the heart of England from the restoration to the railway age c.1660–c.1840', (unpublished PhD thesis, University of Birmingham, 2010), p. 362.

**Source:** Burial registers of Amphill, Bedford St Mary, Bedford St Peter, Biggleswade, Blunham, Bolnhurst, Chalgrave, Clophill, Cranfield, Dunstable, Felmersham, Flitwick, Goldington, Harlington, Kempston, Leighton Buzzard, Luton, Maulden, Millbrook, Milton Ernest, Northill, Pavenham, Potton, Pulloxhill, Renhold, Riseley, Sandy, Souldrop, Southill, Stevington, Thurleigh, Tingrith, Toddington, Woburn and Wootton. Copies of the transcribed registers for the county are available from the Bedfordshire Archives: see <https://bedsarchives.bedford.gov.uk/Guide-to-Collections/FamilyHistory/BedfordshireParishRegisterSeries.aspx> [accessed 9 November 2021].

houses being sub-divided and families allocated one or two rooms at most.<sup>84</sup> Houses were of poor quality even by the standards of the time, and generally had beaten earth floors and little in the way of basic amenities.<sup>85</sup> Seasonal unemployment during the winter, coupled with cramped living conditions, created the perfect environment for the spread of disease, as families huddled together for want of space and warmth, spreading infection to each other.<sup>86</sup> When they succumbed to illness they were the very 'sort of people' who without 'proper assistance and necessities died'.<sup>87</sup>

84 J. Broad, 'Housing the poor in southern England, 1650–1850', *Agricultural History Review* 48 (2000), pp. 151–70, here at pp. 153–5.

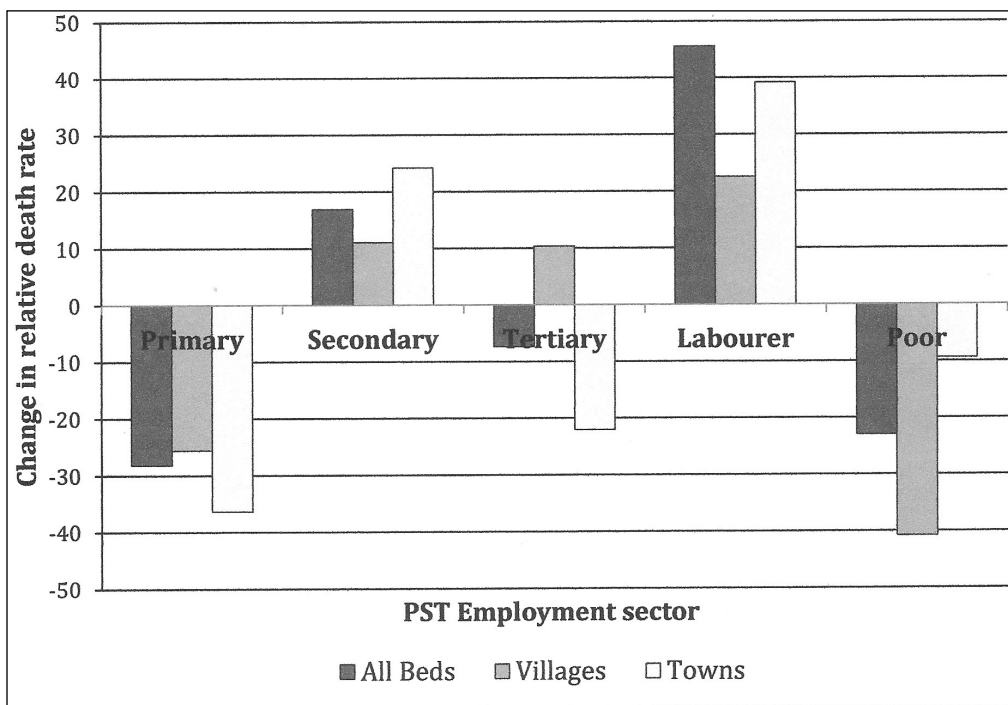
85 M.W. Barley, 'Farmhouses and cottages, 1550–1725', *Economic History Review* 7 (1955), pp. 291–306, here at p. 304, <https://doi.org/10.1111/j.1468-0289.1955.tb01532.x>.

86 Snell, *Annals of the Laboring Poor*, p. 20.

87 Hillary, *Practical Essay on the Small-pox*, p. 13.



Figure 9 Change in relative death rate by primary, secondary and tertiary occupational grouping, Bedfordshire, 1727–1731



**Source:** Burial registers of Amptill, Bedford St Mary, Bedford St Peter, Biggleswade, Blunham, Bolnhurst, Chalgrave, Clophill, Cranfield, Dunstable, Felmersham, Flitwick, Goldington, Harlington, Kempston, Leighton Buzzard, Luton, Maulden, Millbrook, Flitwick, Goldington, Pavenham, Potton, Pulloxhill, Renhold, Riseley, Sandy, Souldrop, Southill, Stevington, Thurleigh, Tingrith, Toddington, Woburn and Wootton. Copies of the transcribed registers for the county are available from the Bedfordshire Archives: see <https://bedsarchives.bedford.gov.uk/Guide-to-Collections/FamilyHistory/BedfordshireParishRegisterSeries.aspx> [accessed 9 November 2021].

It is the matter and manner of this ‘proper assistance’ that is the subject of the final part of this article, which considers the impact upon those potentially at greatest risk—the ‘traditional poor’. The number of traditional poor—that is, those supported wholly or in part by the parish cannot be established with any degree of certainty. They failed to feature to any degree in the Hearth Tax assessment of 1671 and, in contrast to parish registers, the survival of county poor law records for Bedfordshire is wanting, with only those from the parishes of Pavenham and a part of Eaton Socon surviving.<sup>88</sup> Despite the absence of quantitative data it can be inferred that the traditional poor were numerous with a report into St Paul’s workhouse in Bedford reporting: ‘[s]o great is the Number of Poor in this Parish, that without some prudent Rules, and steady Adherence to them, the Parishioners

88 R. Marchbank, *Pavenham: the Lifestory of a Village* (Pavenham, 1993), p. 64.

must be falling foul upon one another upon all Encounters'.<sup>89</sup> They can be readily identified in the parish burial registers, though the way they are described varies from parish to parish, being referred to as 'workhouse', 'collectioner', 'pensioner', 'pauper' or simply 'poor'. For simplicity's sake Figure 9, which shows the change in relative death rate during the crisis for different occupational sectors, uses the collective term 'poor'.

Surprisingly, the risk of death for those classified as poor declined during the crisis by around 20 per cent across the county suggesting that some factor was at play in improving their life chances. This is possibly related to the support that was provided across the parish to those in need. The poor law provided a measure of insulation for those at the margins of society, since it served no purpose for local householders to be taxed only to allow the poor to die.<sup>90</sup> The surviving records from Eaton Socon show that the cost of the local workhouse rose from £227 per annum in 1718–1719 to £323 in 1727–1728. The fact that the parish considered the rise to demonstrate 'pampering' of the poor suggests that the increase was related to more than inflationary pressures.<sup>91</sup> A similar rise in expenditure between 1727 and 1731 was noted in Little Munden, Hertfordshire, ten miles to the east of Luton and Great Staughton, in Huntingdonshire on the north-east Bedfordshire county boundary, suggesting that Eaton Socon's experience was not unusual.<sup>92</sup>

Workhouse occupants in particular, were to a large extent, protected from the rising mortality. Epidemics spread rapidly in overcrowded areas but the rules for the Bedford and Luton workhouses set limits on the number of inmates to prevent the spread of the 'pestilential diseases' feared by the directors. Following an outbreak of distemper in 1723 medical provision was made available in the form of nurses and all inmates received three meals a day of a varied diet.<sup>93</sup> The directors of the workhouses were tasked with ensuring the good health of the poor and when an outbreak of lice was reported in London an oven was installed to bake the clothes of infected inmates.<sup>94</sup> There is no reason to believe that this was not common practice in Bedfordshire, since the association of lice and poverty was well established and, even if it was not, the overseers were responsible for ensuring that the poor, both inside and outside the workhouses, were 'kept clean and neat in their Persons and Apparel'.<sup>95</sup> Those outside the immediate protection of the workhouse were reliant on the parish for help and this took a number of forms. Payments were made to parishioners for undertaking 'neighbouring' duties, which generally related to caring for the elderly or the sick, or for 'boarding-out', which was akin to fostering the young or taking in a lodger. Medical care was perhaps one of the largest causes of expenditure, and parishes gravitated

---

89 Anon., *An Account of Several Work-houses for Employing and Maintaining the Poor: Setting Forth the Rules by Which They are Governed, ... as also of Several Charity Schools for Promoting Work, and Labour* (London, 1732), p. 79.

90 McHugh, 'Dearth, community and the Poor Law', p. 319.

91 F.G. Emmison, *The Relief of the Poor at Eaton Socon, 1706–1834* (Aspley Guise, 1933), p. 26.

92 J. Kent and S. King, 'Changing patterns of poor relief in some English rural parishes circa 1650–1750', *Rural History* 14 (2003), pp. 119–56, here at p. 132, <https://doi.org/10.1017/S0956793303001006>.

93 Anon., *An Account of Several Work-Houses*, pp. 80–8.

94 T.V. Hitchcock, 'The English workhouse: a study in institutional poor relief in selected counties, 1696–1750' (unpublished DPhil thesis, University of Oxford, 1985), p. 181.

95 Anon., *An Account of Several Work-houses*, p. 82.

towards agreeing a contract with a local doctor for the provision of services as the most economical solution.<sup>96</sup>

A more informal approach developed outside the poor law provision based upon philanthropy and was seemingly driven by a sense of Christian charity for those less fortunate. The Bedfordshire landholder Samuel Whitbread was typical in beseeching his children to ‘do good that they may be rich in good works, ready to distribute, willing to communicate, laying up store for themselves a good foundation against the time to come’.<sup>97</sup> The poor benefitted in various forms and were provided with fuel in the winter and food at times of scarcity.<sup>98</sup> Some of the worst effects of the crisis were mitigated through the actions of the Duke of Montague and the Earl of Sunderland, who, in the spring of 1729, delivered supplies to hundreds of poor persons on Bedfordshire’s northern boundary with Northampton ‘whose necessity for want of food for this six months past has been so great by the vigour of the season and dearth of corn that many have perished’.<sup>99</sup> At a county level the overall reduction in death rates for the traditional poor and the absence of any recorded deaths among the poor of Riseley between 1727 and 1731, despite the significant rise in deaths within the parish, suggests that this approach was largely successful and, while death was socially selective, the intervention of parishes and philanthropists ensured that its effects were mitigated, particularly among the traditional poor.

## Conclusion

Kussmaul’s desire to ‘have a bird’s eye view of the past’ has largely been hampered by the patchiness of available sources, as exemplified in this study by the limited survival of poor law records and probate inventories, and the lack of female occupational data.<sup>100</sup> However, given the extensive nature of the surviving source material within parish registers, it is surprising that the 1727–1731 mortality crisis has not been subject to a greater depth of study. Instead, it has been referred to, rather dismissively, as a ‘demographic freak’.<sup>101</sup> Over 60 years after the first regional study it is now clear that the crisis was complex, perhaps far more complex than had previously been realised, with the result that no single explanation is likely to apply to all the parishes that were affected. This paper is a short local study based on a single county, but it does provide answers to some key questions. In Bedfordshire the crisis was a large event, with almost 4,000 excess deaths. It was characterised by at least five overlapping peaks in mortality and the underlying causes are complex but, in each case, can

---

96 J. Walmsley, ‘Provision for the non-able bodied poor in the eighteenth and nineteenth centuries: some evidence from three Bedfordshire parishes’, *Local Historian* 20 (1990), pp. 9–19, here at pp. 13–5.

97 D. Rapp, ‘Social mobility in the eighteenth century: the Whitbreads of Bedfordshire, 1720–1815’, *Economic History Review* 27 (1974), pp. 380–94, here at p. 389, <https://doi.org/10.1111/j.1468-0289.1974.tb01969.x>.

98 The Newcastle Courant, ‘From the Evening Post, Jan 2’, *The Newcastle Courant* (Newcastle), 11 January 1729, p. 1.

99 British Gazetteer, ‘Wednesday His Majesty went to the House of Peers’, *British Gazetteer (London)* (17 May 1729), p. 3.

100 A. Kussmaul, *A General View of the Rural Economy of England, 1538–1840* (Cambridge, 1990), p. 1.

101 G. Holmes and D. Szechi, *The Age of Oligarchy: Pre-industrial Britain, 1722–1783* (London, 1993), p. 134.

## **The Bedfordshire Demographic Crisis of 1727–1731**

---

be related to the spread of epidemic disease, principally typhus, typhoid, influenza, enteric infections and malaria in overlapping pulses, though it would be wrong to rule out a new infection against which the local population had little or no immunity. It is not contended that there was no famine component to the mortality; only that none is evident in Bedfordshire to any great degree. There is little doubt that the crisis was socially selective, though in a differentiated manner. The elderly, those living in urban areas, and the labouring poor all found themselves placed at increased risk. The use of age data generated from family reconstitution has provided some local evidence of a correlation between age and death from fever. The reasons for the pattern of selectivity can never be ascertained with absolute certainty but appear to relate to the likelihood of the elderly suffering from underlying health issues coupled with the cramped and unhealthy living conditions endured by the labouring poor, especially in urban areas, that created the perfect environment for infections to spread. In sharp contrast, local welfare arrangements provided adequately for the traditional poor, who remained largely unaffected by the crisis and saw their death rates fall between 1727 and 1731. Given the high death rate across the county during these five difficult years, equivalent to around one person in twelve, it may be that the first character in this story, Rev. Rogers, was fortunate in surviving the crisis, though it may have been less divine providence (as he was wont to believe) and more his lifestyle and status that reduced his risk of succumbing to the myriad infectious diseases circulating at the time.

### **Acknowledgements**

The author would like to thank Dr Jonathan Healey for his helpful comments on an early draft of this article.