

Smallpox in Eighteenth Century Winchester

Dear Sir,

As part of a larger study of the contribution made by a local hospital (Founded 1736) to the health of Winchester and the County of Hampshire, I have examined a number of parish registers for evidence of epidemics. The registers of the combined parishes of St. Maurice and St. Mary Calendar, Winchester, in which the hospital was situated, contain information about smallpox mortality, which is expressed below as a percentage of the total annual burials.

Years in which Smallpox deaths occurred.	Smallpox burials as % of all Burials
1739	2%
1740	17%
1742	4%
1748	7%
1753	31%
1754	16%
1757	25%
1758	18%
1763	20%
1766	5%
1767	10%
1768	4%
1773	4%
1774	16%
1778	1%
1779	9%

In the registers of St. Peter Chesil, Winchester only two dates are important;

1740	55%
1753	10%

There are no burials in the registers of St. Michael, Winchester recorded as of smallpox deaths and Dr. M. Hughes informs me that the registers of the nearby village of Twyford also have no information about smallpox deaths. On the other hand, the registers of Ringwood reveal percentages of sixty and above for the years 1712, 1726 and 1761. Many of the intervening years show low percentages and only three other years reach two figures. This investigation is not complete.

A discussion of a short series of figures like the above must be largely speculative and without information about the morbidity of smallpox it is not possible to calculate mortality rates for the disease, nor can we determine how these may have varied during the century. The figures collated do show that in this 'Age of Smallpox' the disease was endemic in Hampshire. Like the plague in the seventeenth century it is usually the only cause of death given in the eighteenth, which demonstrates the fear associated with outbreaks of smallpox. No effective drugs were available and there were only two methods of controlling the scourge; inoculation and isolation. Inoculation was the process described by Lady Mary Wortley Montagu, in 1721, whereby smallpox was transferred from patient to patient. It must be distinguished from Jenner's vaccination method which used cowpox to confer an artificial immunity from smallpox. This was not introduced until 1798 and not generally adopted until the nineteenth century.

The introduction of inoculation into England is probably best described by Genevieve Miller in The Adoption of Inoculation for Smallpox in England and France. The opinions of C. Creighton on smallpox, as expressed in History of Epidemics, are suspect and R.S. Roberts 'Epidemics and Social History', Medical History, 1968, XII, 305-316 should be read before making reference to Creighton's famous and recently re-printed work. Briefly, inoculation was, at first, treated with suspicion and there were fatalities due to the use of dangerous strains of the virus. Later, safer strains were introduced and used successfully by the Suttons and other inoculators. The operation received the approval of the College of Physicians in 1756, but there continued a good deal of opposition to its use. Bishop Maddox, who favoured inoculation, claimed that two thousand people were inoculated in Southern England during an outbreak of smallpox in 1742, but the oldest surviving document about inoculation in the Winchester Archives, dated 1758, is an agreement between the apothecaries and surgeons to ban the procedure for two years to "Put an entire Stop to the Distemper Spreading". P.E. Razzell, 'Population change in eighteenth century England', Economic History Review, 1965, XVIII, 312-332 challenges the Winchester Surgeons and Apothecaries' opinion and would

have us believe that the success of inoculation led to the increase in population towards the end of the eighteenth century.

The absence of references to smallpox deaths after 1780 in the St. Maurice registers seems to support Razzell's view, but the mere absence of recorded smallpox deaths must be treated with grave suspicion. The clerk may have simply given up the practice of recording, or again, the policy of isolation may have become more effective, patients who died being buried elsewhere. Other sources, such as the local newspaper do support the opinion that there was a reduction in the number of smallpox cases after the first and probably the only mass inoculation carried out in the Winchester area in 1774. About nine hundred were inoculated including nearly four hundred poor persons. The cost of inoculation was beyond the means of the poor and economic considerations must have restricted the widespread use of the technique to the families and servants of the affluent. The popularity of the free scheme led to the imposition of another ban on the operation, this time by the local magistrates, who proposed fines and imprisonment on those continuing to inoculate after April 30th, 1774. Similar bans were imposed, in later years, before the start of the Winchester summer season, because it was thought that inoculation would spread the disease; contemporary local opinion, both lay and medical, again contradicting Razzell's view.

The inoculators claimed that, whereas the normal mortality rate of smallpox was 200-250 per thousand, less than one in a thousand died after inoculation. But any decline in the mortality of smallpox for which the inoculators claimed credit may equally well be explained by a natural decline in the virulence of the disease. A Winchester poet writing about the beneficial effects of inoculation pointed out that 'beauty was the prey' of smallpox, and when these words were written it may have been the severe pocking which was feared more than death. A natural decline in the virulence of smallpox would tend to increase the population surviving an attack. This population, naturally immune, was probably larger than the inoculated section. Furthermore, the evidence so far obtained does suggest an increasing lack of interest in Winchester. In 1790 another proposal for mass inoculation of the poor came to nothing.

The crude annual burial statistics of the combined Winchester parishes of St. Maurice and St. Mary Calendar show a significant decline in the number of deaths from all causes after 1780. Obviously other agencies were now at work, but until we have more information about other diseases and many more facts about smallpox we may only theorize

about the reasons for the decline. Inoculation, according to some, was responsible for this improvement but, in Winchester at least, there were limitations imposed on the inoculators, which suggest that natural reductions in the virulence of smallpox and other diseases were bigger factors.

No attempt has been made to assess the effect of isolation procedures at the hospital, where there is no evidence of inoculations having been performed on patients. How can we measure the effects of the hospital's rules and the City's isolation orders on the spread of smallpox? What contributions too, did the Pavement Commissioners make by cleaning up the City? The Ringwood percentages differ from those of the Winchester parishes, but Ringwood had no County Hospital. Information is lacking about the extent of inoculation and isolation techniques in the New Forest area. Was Ringwood an isolation and reception area? Did mortality rates differ from those at Winchester? The questions which may be posed are numerous. No solutions have been found but the accumulation of evidence in Hampshire and elsewhere should contribute a great deal to the elucidation of the difficulties I have encountered whilst studying the health problems of eighteenth century Winchester.

Yours,

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Mr. Boorman's article provides a good example of a kind of argument which is common in historical studies. This involves the comparison of the frequency of certain events at different times or places to see if any conclusions can be drawn from the similarities or differences observed. To make comparison easier the frequencies of these events are usually expressed as percentages of all events - in this case the frequency of deaths by smallpox were expressed as a percentage of all burials. This kind of argument is a useful and valid one, but it might be worthwhile to emphasize one or two essential points in connection with percentages which are often overlooked.

The first point is a simple one, that percentages are only standardized expressions of proportions and can therefore be based on widely differing numbers of observations. Percentages based on very small numbers of observations are obviously less 'stable' than those

based on large numbers of observations. For example, a proportion of 33% based 100 observations would not be greatly changed if one of the observations were to 'change sides', but the same proportion, if it had been based on only 3 observations, would in the same circumstances become 0% of 67%.

It is therefore only fair to warn the reader of possible 'instabilities' in percentages, and the first point is that the total number of observations on which each percentage has been calculated should always be given.

The second point is that it is no less important to chose the right 'total' group of observations as the basis for the calculations of the percentages. For example in the context of smallpox we might initially decide to express smallpox deaths as a percentage of all deaths. But if we were to do this we should have no way of telling whether a figure of 0% of smallpox deaths meant that there were in fact no deaths from smallpox, all deaths arising from other causes, or whether no causes of death were recorded in the burial register. Nor should we be able to tell whether a low percentage of smallpox deaths meant that in fact few people died of smallpox, or whether only a few burial register entries gave the cause of death, all of which may actually have been stated as smallpox. Clearly in this context the most sensible thing is to express the number of smallpox deaths as a percentage of all burials for which the cause of death is known, and this in turn means that it is advisable to concentrate on registers in which cause of death is given consistently.

The second point therefore is that all 'unknown' or 'not stated' items should be excluded from the total number of events before the percentage is calculated. It is good practice to state clearly both the nature of the basic 'population' on which the percentages have been calculated and also the number of 'not stated' items which have been excluded from this basic 'population'.

If these two points are observed the reader should be in a better position to assess the significance of the percentages which are presented to him and the strength of the conclusions which follow from them.

R.S. Schofield.

This is an interesting and valuable contribution to the literature of the smallpox controversy but it could be made considerably more useful if Mr. Boorman had been able to explain one or two points in more detail. For instance, his reference to "the oldest surviving document about inoculation in the Winchester archives, dated 1758, is an agreement . . . to begin this procedure . . ." could have been expanded. Did it contain anything on methods ? Or results ? Was the language couched in reasoned argument or ignorant abuse ? Also the statement "patients who died being buried in another parish": is this pure speculation or has it any factual foundation ? I find it difficult to believe that another parish would receive smallpox patients, still less, bury them ! Why should they ? Is it not more likely they would "remove" them to their own parish ? "Other sources support the opinion that there was a reduction in the number of smallpox cases . . . after 1774". What are the other sources ? They should be quoted. And what is the source for the statement that there were nine hundred inoculated patients of whom four hundred were poor people ?

On the subject of proposed fine or imprisonment for inoculation, it would be of interest to know under what Act this would be authorised and whether it was ever carried out ?

I am particularly interested in the subject of immunity dealt with in the last paragraph. This combined with the implied decline of virulence of this disease is very important: but was there a decline of this kind ?

J.D. CHAMBERS.

If anyone has any evidence or information on immunity or the decline in virulence of smallpox we should be glad to hear of it. (Editors' note)