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The Treatment of Whooping Cough in Eighteenth-Century England

In 1813, the contemporary physician, Robert Watt (1774-1819), published *A Treatise on the History, Nature and Treatment of Chincough*. Watt was unhappy with the lack of previous interest in whooping cough, particularly among physicians. He noted that whooping cough had not been investigated with 'that care and attention which its frequency and fatality deserved.'[2] Part of the problem, claimed Watt, was that no one really knew what parts of the body were associated with whooping cough as it was believed that the disease disappeared from the body upon death.[3] Whooping cough, also called hooping cough, chincough, and kinkcough, received little attention from medical personnel prior to the eighteenth century.[4] However, despite Watt's later claims, as the eighteenth century progressed physicians began to turn their attentions towards the treatment of whooping cough. The rise in the number of individuals dying of whooping cough fully warranted the increased attention paid to it in the latter half of the century.[5] Using domestic receipt books and texts written by physicians in England and Scotland, including those which detailed the results of experiments, this article will examine the diagnosis of whooping cough and the care given to patients, particularly children, and assess how

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[2] Robert Watt, *Treatise on the History, Nature, and Treatment of Chincough: Including a Variety of Cases and Dissections; to Which Is Subjoined: An Inquiry into the Relative Mortality of the Principal Diseases of Children and the Numbers Who Have Died under Ten Years of Age in Glasgow during the Last Thirty Year* (Glasgow: John Smith and Son, 1813), p. vii.

[3] Ibid. p. vii.

[4] William Buchan, *Domestic Medicine Or, a Treatise on the Prevention and Cure of Diseases by Regimen and Simple Medicines*, 7th edn (London: D. Graisberry, 1781), p. 362.

[5] Based on data in Creighton, *The History of Epidemics*, Weston estimated that 3,246 individuals died from whooping cough in London between 1749 and 1764. By the end of the eighteenth century, an average of 400 deaths per annum in London were attributed to the disease. Robert Weston, 'Whooping Cough: A Brief History to the 19th Century', *Canadian Bulletin of Medical History*, 29:2 (2012), 329–49, (p. 335).

developments were made in the use of new treatments. It will show that, during the eighteenth century, whooping cough was the subject of a vibrant discussion and exchange of ideas within the medical community. However, there was little, if any, standardisation in the treatment of whooping cough by the end of the century.

The term whooping cough, hooping cough, or chincough, was first recorded in 1190 but Robert Weston's recent work suggests that, although whooping cough had been present in England since its earliest mention, it was not until the eighteenth century that it became an epidemic disease.[6] Demographic studies show that between the years 1701 and 1812 epidemics of whooping cough occurred every three to five years, thus explaining why it was largely, but not exclusively, a disease of childhood.[7] Whooping cough, like smallpox, was believed to be a disease that could only be contracted once in a lifetime. When individuals caught whooping cough as small children, they were highly unlikely to catch it again as adults. There were few non-immune people among adults, so children were the only large group in the population who were susceptible to the disease.[8]

The physicians who wrote about this disease, with the exception of Robert Watt, did not explain why they had chosen the terms they did. Watt argued strenuously that chincough was preferable to kinkcough and whooping cough, and was the best of the limited terminology on the disease. Since the term kinkcough was largely confined to Scotland he decided not to use it, arguing that 'it is a provincial term, is harsh and difficult to be pronounced, and besides it does not convey with sufficient precision the idea intended.'[9] As for the term hooping cough, Watt felt that it conveyed 'an erroneous notion of the disease', but did not elaborate upon what this

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[6] Weston, p. 329.
[7] C.J. Duncan, S.R. Duncan and S. Scott, 'Whooping Cough Epidemics in London, 1701-1812: Infection Dynamics, Seasonal Forcing and the Effects of Malnutrition', *Proceedings: Biological Sciences*, 263 (1996), 445–50.
[8] Ibid. p. 447.
[9] Watt, pp. 18-19.

erroneous notion was.[10] The term hooping cough was generally thought to describe the 'hooping' sound made by the patient whilst coughing, whilst chincough was thought to refer to the convulsive-like nature of the cough. Both of these names described the distinctive nature of the disease. This article will use the term whooping cough, because it is known and used in modern day terminology. However, when referencing contemporary sources, the original terminology will be used.

Although whooping cough was included in some seventeenth-century medical texts – both domestic receipt books and those written by physicians – the earliest treatise in English to focus exclusively on the disease is the 1769 work, *Observations on the Asthma and on the Hooping Cough*, by John Millar (1733-1805). Prior to this date, whooping cough was treated as a specific disease, but only mentioned in general treatises that covered diseases prevalent at the time. William Buchan (1729-1805) was one of the first to discuss whooping cough in his *Domestic Medicine*, also published in 1769. Buchan argued that whooping cough 'seldom affects adults', but that adults were susceptible, particularly if they had not suffered from it during childhood. Buchan claimed that the kind of child most susceptible to whooping cough was one who lived upon a 'thin, watery diet, who breathes unwholesome air, and has too little exercise.'[11] Buchan failed to mention, or perhaps failed to recognise, that children who were otherwise healthy could also contract the disease. William Butter (1726-1805) also noted some predisposing factors in those more likely to suffer from whooping cough, including a hereditary predisposition to a spasmodic disorder, a redundancy of vitiated humours in the stomach and guts; worms; dentition; catching cold; and acute diseases in general.[12] The poor were thought to be more susceptible to illness than the rich, and children similarly were thought to be predisposed to

[10] Ibid. p. 19.
[11] Buchan, p. 363.
[12] William Butter, *A Treatise on the Kinkcough. With an Appendix, Containing an Account of Hemlock, and Its Preparations* (London: T. Cadell, 1773), p. 50.

disease, although for poor children the situation was more complex.[13] Thus, children, particularly poor children, were believed to be susceptible to diseases, as their constitutions allowed for illness to develop within their bodies.

The constitution of the patient was often taken into account when diagnosing and treating illness, and was linked to the humours. The humours needed to be in balance for the body to be healthy; an imbalance led to illness. An individual's constitution could lead to imbalance, not enough to cause illness, but enough to encourage a change in behaviour or consumption.[14] The constitution of the patient was also taken into account when hot, cold, spicy or bitter remedies were prescribed. Hot food or drinks could cause a sweat, which in turn could bring about illness. Too much cold could likewise cause illness. A delicate constitution would be unable to take strong or bitter tasting medicines, and a previous disease could leave the constitution weakened. Therefore, full knowledge of a patient's history was necessary before treatment could begin.

The history of childhood and childhood medicine has, until recently, been patchy. This is slowly being rectified, although the historiography has predominantly focused on the medieval period and the nineteenth and twentieth centuries.[15] Children have been little noted in general

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[13] Alysa Levene and Kevin Siena, 'Reporting Dirt and Disease: Child Ill-Health in Seventeenth and Eighteenth-Century England', *Journal of Literature and Science*, 6:1 (2013), 1–17, (p. 1).

[14] Olivia Weisser, *Ill Composed: Sickness, Gender, and Belief in Early Modern England* (New Haven: Yale University Press, 2015), p. 23.

[15] Philippe Ariès, *Centuries of Childhood*, trans. Robert Baldick (Harmondsworth: Penguin, 1986); Barbara A. Hanawalt, *Growing Up in Medieval London: The Experience of Childhood in History* (Oxford: Oxford University Press, 1993); Ilana Krausman Ben-Amos, *Adolescence and Youth in Early Modern England* (London: Yale University Press, 1994); Nicholas Orme, *Medieval Children* (London: Yale University Press, 2003); Alun Withey, *Physick and the Family: Health, Medicine and Care in Wales, 1600-1750* (Manchester: Manchester University Press, 2011); Joanne Bailey, *Parenting in England, 1760-1830: Emotion, Identity, and Generation* (Oxford: Oxford University Press, 2012); Alysa Levene, 'Childhood and Adolescence', in *The Oxford Handbook of the History of Medicine*, ed. by Mark Jackson (Oxford: Oxford University Press, 2011), pp. 321–37; 'Great Ormond Street', *Historic Hospital Admission Records Project* (2009) <http://hharp.org/library/gosh/> [accessed 25 April 2016]; *Disabled Children: Contested Caring, 1850–1979*, ed. by Anne Borsay and Pamela Dale (Oxon: Routledge, 2015); Andrea Tanner, 'Choice and the Children's Hospital: Great Ormond Street Hospital Patients and Their Families, 1855-1900', in *Medicine, Charity and Mutual Aid: The Consumption of Health and Welfare in Britain, C. 1550-1950*, ed. by Anne Borsay and Peter Shapely (Aldershot: Ashgate, 2007), pp. 135–62.

texts on the history of medicine, unless used to discuss childhood specific diseases such as whooping cough, smallpox or measles.[16] George Still argued that some progress had been made in the recognition of childhood diseases during the eighteenth century, but that progress in the development of childhood medicine had been slow.[17] Adriana Benzaquén has illustrated that during the eighteenth century, the medical care of children by physicians became more common.[18] Similarly, Mary Lindemann has shown that the number of texts on the subject of children's health increased dramatically during the eighteenth century, and that medical training began to include paediatrics in the latter years of the century.[19] Physicians in the eighteenth century became experts on child health and on how to raise healthy children, taking the role away from mothers and nurses.

The importance of children as patients has been discussed by Iris Ritzmann and Hannah Newton. Both suggest that children could not always be relied upon to tell the truth about their illness or even to adequately articulate what was wrong with them, but that their nurses and mothers, along with the symptoms themselves, helped sick children to gain medical treatment.[20] Newton has gone further in a recent article, discussing the subject of specific medical care for children – rather than children being medically treated in the same way as adults. Her research has identified that the need for children to receive bespoke medicine was recognised, but her

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[16] Anne Hardy, *The Epidemic Streets: Infectious Disease and the Rise of Preventative Medicine, 1856-1900* (Oxford: Clarendon Press, 1993).

[17] George Frederick Still, *The History of Paediatrics: The Progress of the Study of Diseases of Children up to the End of the XVIIth Century* (London: Dawsons of Pall Mall, 1965), p. 323.

[18] Adrianna S. Benzaquén, 'The Doctor and the Child: Medical Preservation and Management of Children in the Eighteenth Century', in *Fashioning Childhood in the Eighteenth Century : Age and Identity*, ed. by Anja Müller (Aldershot: Ashgate, 2006), pp. 13–24.

[19] Mary Lindemann, 'Health and Science', in *A Cultural History of Childhood and Family in the Age of Enlightenment*, ed. by Elizabeth Foyster and James Marten (London: Bloomsbury, 2010), pp. 165–84, (p. 167).

[20] Iris Ritzmann, 'Children as Patients in German Speaking Regions in the Eighteenth Century', in *Fashioning Childhood*, ed. by Müller, pp. 25–32; Hannah Newton, *The Sick Child in Early Modern England, 1580-1720* (Oxford: Oxford University Press, 2012).

analysis is restricted to seventeenth-century developments.[21] Newton also argues that children, and their medicine, was defined by their humours, which were different from adults. 'These humoral qualities influenced the functioning of children's body parts, as well as the inclinations of their minds and emotions.'[22]

Alysa Levene's discussion of the medical care provided in the Foundling Hospital has been built upon by her wider research on workhouses in the late eighteenth and early nineteenth centuries. Her research demonstrates the importance of studying childhood along with medicine and general care.[23] In addition, Peter Kirby has examined childhood health with regards to childhood work. However, although he discusses children who worked in mining, he neglected to discuss whooping cough in detail despite Hardy's assertion that whooping cough was prevalent in mining communities.[24] Individual childhood diseases are likewise rarely discussed in detail and generally, with the exception of smallpox, do not form the subject of individual works. Whooping cough is predominantly mentioned only in passing, and described as a disease that was generally feared but little understood or written about at the time.[25] As a result, it was largely excluded from treatment in institutions, but this was not unique to whooping cough, as many diseases of childhood were excluded from treatment in institutions.[26] Thus, this article aims to fill the gap between studies of childhood medicine and whooping cough, a disease that has been relegated to the footnotes of history.

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[21] Hannah Newton, 'Children's Physic: Medical Perceptions and Treatment of Sick Children in Early Modern England, c.1580–1720', *Social History of Medicine*, 23:3 (2010), 456-74; Hannah Newton, '"Very Sore Nights and Days": The Child's Experience of Illness in Early Modern England, c.1580–1720', *Medical History*, 55:2 (2011), 153–82.
[22] Newton, *The Sick Child*, p. 32.
[23] Alysa Levene, *Childcare, Health and Mortality at the London Foundling Hospital, 1741-1800: "Left to the Mercy of the World"* (Manchester: Manchester University Press, 2007); Alysa Levene, 'Children, Childhood and the Workhouse: St Marylebone, 1769-1781', *The London Journal*, 33:1 (2008), 44–59; Alysa Levene, *The Childhood of the Poor: Welfare in Eighteenth-Century London* (Basingstoke: Palgrave Macmillan, 2012).
[24] Peter Kirby, *Child Workers and Industrial Health in Britain 1780-1850* (Woodbridge: The Boydell Press, 2013); Hardy, p. 10.
[25] Hardy, pp. 9-27.
[26] John Woodward, *To Do The Sick No Harm: A Study of the British Voluntary Hospital System to 1875* (London: Routledge & Kegan Paul, 1974), p. 55.

The Diagnosis of Whooping Cough

Those caring for children with whooping cough in the eighteenth century were expected to know the patient was suffering from whooping cough without medical intervention. Domestic receipt books did not include information on how to diagnose specific conditions, implying that those using these texts were able to identify, or were at least familiar with, the symptoms of each condition. Buchan himself noted that whooping cough was such a well-known disease that nurses would have been able to identify it from the symptoms.[27] However, in the early stages of whooping cough physicians also found it difficult to identify, due to the various complications of asthma, fever, and the common cold. It was undeniable only once the whoop began, approximately two weeks into the disease. There is no mention of such complexities within the domestic receipt books, perhaps because in domestic medicine children were treated for their symptoms, such as cold and fever. Physician John Hancocke (d. 1728) stated that professionals seldom cured the disease. Whooping cough cured itself rather than was treated.[28] This would help explain why the care of individuals with whooping cough was largely left to those described by Willis as 'old women and quacks'.[29] Whooping cough resembled a common cold prior to the appearance of the 'hooping' or 'kink' sound.[30] The middling stages of the illness were compared to typhus and typhoid in terms of the state of respiration, the stomach, and the bowels. It was also confused with asthma and bronchitis. A fever was also occasionally recorded with whooping cough, adding further similarities to the common cold or the flu.[31] Butter also observed that: 'generally the patient hath a bloated, languid, wan appearance: his belly is costive; his urine is pale, through mostly with sediment; and his limbs are cold'.[32] Whilst these symptoms were to be considered when treating potential cases of whooping cough, it was

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[27] Buchan, p. 362.
[28] John Hancocke, *Febrifugum Magnum: Or, Common Water the Best Cure for Fevers, and Probably for the Plague. With a Discourse of Curing the Chin-Cough by Water*, 8th edn (London: J. Roberts, 1726), p. 116.
[29] Dr Thomas Willis (1621-1675), quoted in Watt, p. viii.
[30] Watt, p. 51.
[31] Butter, p. 3.
[32] Ibid. p. 4.

always the 'hoop' of the cough that finally confirmed the diagnosis. In addition, the predisposing factors discussed by Buchan and Butter had to be taken into account by those attempting to diagnose a possible instance of whooping cough.

Buchan and John Burton (1710-1771) viewed whooping cough from a humoral standpoint. They both identified phlegm as being present and out of balance. Buchan believed that the stomach needed to be cleansed and strengthened, and perspiration promoted among other excretions. He believed that the causes of whooping cough created an obstruction which prevented the body from excreting its poisons in the normal way.[33] The removal of phlegm from the stomach rather than the lungs was prevalent in Buchan's treatment, and he recommended vomits to rebalance this humour. Buchan also claimed that the air was partly responsible for children suffering from whooping cough, and advised a change of air as part of the cure.[34] Burton acknowledged the excess of phlegm as a cause of whooping cough, and advocated that it had to be excreted out of the body. However, his approach differed slightly from that of Buchan as he advised against bleeding and vomiting. Burton did acknowledge that the diet of the patient allowed for common food to be 'converted to phlegm', and thus to line all of the body, particularly the lungs, which caused the patient to cough. Stubborn phlegm strained the patient and caused the 'hoop' cough.[35] Both Buchan and Burton identified the need to evacuate the cause of the whooping cough from the patient's body, but their approach was not universally followed. Watt, writing later, suggested that the breathing and the lungs of the patient were affected, but did not acknowledge the presence of phlegm. However, he did note

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[33] Buchan, p. 225.
[34] Ibid. p. 226.
[35] John Burton, *A Treatise on the Non-Naturals, in Which the Great Influence They Have on Human Bodies Is Set Forth, and Mechanically Accounted For; to Which Is Subjoin'd a Short Essay on the Chin Cough, with a New Method of Treating That Obstinate Distemper* (York: printed by A. Staples, and sold by him and J. Hildyard, 1738), pp. 346-7.

the presence of mucus in the stomach.[36] He identified this mucus as one of the main issues in whooping cough, but he made no link with phlegm and the humoral aspect of medicine.[37]

Whooping Cough in Domestic Receipt Books

The correct treatment for whooping cough was not agreed upon in the eighteenth century. Physicians disagreed over the treatments they recommended, whilst authors of domestic receipt books provided a variety of remedies based upon what they knew worked from precedent. The domestic receipt books considered in here provide a representative sample of those produced during the period. Willis' reference to 'old women and quacks' implies that whooping cough ought to feature regularly in domestic receipt books. However, not every household or domestic receipt book included a remedy for whooping cough, as they required the user to be able to read. Domestic receipt books were often handwritten texts that were passed around between family members and other members of the community. Different hands can be found in some of these texts, supporting the point that they were added to by various people throughout their lifetimes. These domestic texts often included cookery recipes alongside physic, making a clear link between cookery and medical care in the early modern period. Some texts, such as those by Mary Kettilby, Hannah Woolley and Martha Bradley, were published versions of the domestic receipt books, and these texts still included both cookery and physic receipts. The books were largely written by and for women, although there is no evidence to suggest men did not use these books too. Hannah Woolley's *The Queen-Like Closet* (1684) did not include whooping cough as a specific disease, but did provide several remedies for various types of cough which may have covered whooping cough.[38] The omission of whooping cough from some domestic receipt books, and the similarity between the remedies for whooping

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[36] Watt, p. 61.
[37] Ibid. p. 63.
[38] Hannah Woolley, *The Queen-like Closet, or Rich Cabinet: Stored with All Manner of Rare Receipts for Preserving, Candying and Cookery: Very Pleasant and Beneficial to All Ingenious Persons of the Female Sex. To Which Is Added, A Supplement presented to All Ingenious Ladies, and Gentlewomen*, 5th edn (London: Printed for R. Chiswel ... and T. Sawbridge, 1684).

cough in others, suggests that the disease was either not sufficiently distinguished from a cough or cold or that it was common enough to be adjudged as suitable for home treatment. Whooping cough was distinguishable enough to be recorded in the London Bills of Mortality. However, whooping cough was originally listed with cough, and often noted by itself as either chin cough or hooping cough. In the 1680s, whooping cough was responsible for few deaths, with average numbers falling between 5 and 10.[39] Some years, such as 1689, 1712, and 1715, did not list any recognised terms for whooping cough. However, from 1716 the number of individuals dying from whooping cough began to increase. In that year, 11 from a total of 24,346 individuals died of whooping cough (0.04 per cent of the overall). In 1754, whooping cough was responsible for the deaths of 336 individuals (1.4 per cent of total deaths).[40] Outbreaks of whooping cough became regular across the country. In 1772, whooping cough was identified in the north of England, and in 1794 whooping cough caused the deaths of six children in Kent.[41] Between the years 1844 and 1853 whooping cough was the seventh most fatal disease out of ninety-nine listed by the registrar general for all ages, indicating either an increase in whooping cough cases or, at least, an increase in the identification of the disease throughout the eighteenth and into the nineteenth centuries.[42]

The ingredients of the remedies for whooping cough in many of the domestic receipt books were all, as Nicholas Culpeper (1616-1654) remarked, so well-known that they did not need to be described. Accessibility and recognisability of ingredients were key aspects in the production of these remedies. For a cough, Culpeper suggested that rosemary should be 'taken in a pipe, as tobacco is taken', by adults and children.[43] He made no mention of it being mixed with ivy and

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[39] A. Millar, *A Collection of the Yearly Bills of Mortality from 1657-1758 Inclusive, Together with Several Other Bills of an Earlier Date*, (London: Printed for A. Millar in the Strand, 1759).
[40] Millar, p. 230.
[41] Mary J. Dobson, *Contours of Death and Disease in Early Modern England* (Cambridge: Cambridge University Press, 1997), pp. 440, 447.
[42] Hardy, p. 9. Hardy's text does not provide a breakdown of age ranges for these records.
[43] Nicholas Culpeper, *Culpeper's Complete Herbal* (Ware: Wordsworth, 1995), p. 220.

hyssop to create the medicinal cure for the hooping cough recommended by Mary Kettilby.[44] However, when describing the virtues of hyssop, Culpeper did discuss how to mix the ingredient with others for some medicines. He suggested that mixing hyssop with rue and honey, and drinking the resultant mixture, 'help[ed] those that are troubled with coughs, shortness of breath, [and] wheezing'. Culpeper claimed that hyssop was effective at 'expectorat[ing] tough phlegm, and is effectual in all cold grief's (sic) or diseases of the chests or lungs, being taken either in syrup or licking medicine'.[45] Ingredients known to be purgatives, either mixed together or with other ingredients, or indeed used alone, illustrate that it was at least acknowledged that for whooping cough the phlegm needed to be expelled from the body. Furthermore, it demonstrates a recognition that this type of treatment was appropriate for cases of whooping cough within the domestic sphere.

The types of ingredients used within domestic medicine for the treatment of whooping cough were largely summer or spring blooming plants and herbs. They were well known and widely available in the correct seasons. Such ingredients could only be collected for use at certain times of the year, but there is no mention in any of the receipt books that these medicines could be made and stored. Conversely, there was also no mention that they could not be made and stored, but the fact that whooping cough affected individuals throughout the year suggests that they could be tried and stored though the books do not specify this.[46]

The recommended remedies provided in the domestic texts were all drinks. The anonymous writer of *A Book of Physick* suggested the following two remedies for whooping cough. First:

> Let blood take hartshorn drops in water 2 or 3 times a day, a syrup made of a exgi (?) juice of mellipedes or hoglica drown in white wine and given by spoonfulls will infallibly

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[44] Mary Kettilby, *A Collection of above Three Hundred Receipts in Cookery, Physick and Surgery for the Use of All Good Wives, Tender Mothers, and Careful Nurses. By Several Hands*, 1st edn (London: Printed for Mary Kettilby, sold by Richard Wilkin, 1714), p. 78.
[45] Culpeper, p. 134.
[46] Withey, pp. 103, 107, 110.

> cure childrens convulsions or chin cough – if these remedies does not cure must change the dir.[47]

Second: 'Take a glass of sherry mix it with a little water, nutmeg and sugar and give children ½ an hour before dinner. China oranges moderately eaten is good.'[48] The first remedy suggested that if the treatment did not cure the disease at hand, either whooping cough or convulsions, then the directions must change. However, as there is no further mention of the disease, it is unclear what this change in direction comprised.

Mrs Mead wrote of whooping cough:

> Take cuppe mosse, dry it and beate it to powder, sieve it very fine, and take as much as will lie upon a six pence and give it a going to bed in barley water with a little syrup of poppies (opium) or give some of the powder in any victuals they [the children] take. Doe not give a child syrup of poppies but at night, going to bed.[49]

The mention of poppy as part of a remedy is one of the few overlaps with the remedies given in the professional medical texts, some of which suggested that opium was a good cure for whooping cough. This again demonstrates that the remedies within the domestic medical texts relied upon ingredients which were easily available.

The remedy recorded by Kettilby in her first edition called for the preparer to 'dry the leaves of box-tree very well, and powder them small; and give the child of this fine powder in all its meal and drink that it can be disguised in. Tis excellent in that distemper.'[50] Yet the remedy in the fourth edition listed different ingredients. The preparer was ordered to take 'ground-ivy, rosemary and hyssop, of each one handful; distil them in a quart of new milk, and let it drop on a quarter of a pound of sugar candy; take a spoonful night and morning, and as often as you

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[47] Wellcome Library, MS 1320, Anonymous, 'A Book of Physick', p. 138.
[48] Anonymous, 'A Book of Physick', p. 14.
[49] Wellcome Library MS 3500, 'Mrs Mead and Others', (1725), p. 17.
[50] Kettilby, p. 202.

please'.[51] Martha Bradley, writing in 1760, also provided two different remedies for whooping cough in her text, both different from Kettilby's. The first directed the preparer to:

> Roast what quantity of eggs you please until the whites begin to be hardish; then break the tops of the eggs, pour out the yolkes, and fill up the vacancies with white sugar-candy powdered very fine. This done, cover the holes again with pieces of the whites, put them in a clean earthen dish, and set it in hot wood ashes for sometime. Be careful to save all the liquor that runs from them, and give a spoonful of it at a time to the child thus affected.[52]

The second required the preparer to 'take a quarter of a pound of brown sugar-candy, and beat it small; put it to a quarter of a pint of aqua vitae, set it on the fire in an earthern pipkin, and boil it to a syrup'.[53] Sugar candy is the most prominent ingredient in these remedies, although even this was white in one of Bradley's remedies and brown in the other. Kettilby's text did not specify what colour should be used. Sugar candy, used to sweeten bitter remedies, was relatively common during the eighteenth century, particularly in remedies for children.[54] Before the mid-seventeenth century honey was the sweetener of choice, but once sugar became more widely available it was used instead.[55]

In contrast to Porter and Porter's assertion that 'pre-modern medicine tasted foul', Newton argues that physicians attempted to make medicines agreeable to child patients.[56] Bitter tastes were substituted for sweeter tastes that worked better with children. If the taste could not be changed, attempts were often made to mask the bitterness by putting medicine in food or drink, or by adding juice of lemons. Older children were more likely to be given the bitter ingredients in their medicines, although some physicians refused to allow medicinal changes to be

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[51] Kettilby, p. 78.
[52] Martha Bradley, *The British Housewife Or, the Cook, Housekeeper's, and Gardiner's Companion. ... Containing a General Account of Fresh Provisions ... a Bill of Fare for Each Month, ... Receipts ... To Which Are annexed, the Art of Carving; ...And a Variety of Other Valuable Particulars, ...Embellished with ...Copper Plates* (1760), p. 622.
[53] Bradley, p. 622.
[54] Newton, *The Sick Child*, p. 84.
[55] Joan Thirsk, *Food in Early Modern England: Phases, Fads, Fashions 1500-1760* (London: Continuum, 2007), p. 324.
[56] Porter and Porter, quoted in Newton, *The Sick Child*, p. 83.

undertaken to allow children a more pleasant experience and taste.[57] As Buchan advised: 'most children are fond of syrups and jellies', they would 'seldom refuse even a disagreeable medicine when mixed with them'.[58] The rest of the ingredients which appear frequently in the remedies: ivy; rosemary; hyssop; and eggs, were the types of ingredients that could easily be sourced from the garden or local market.

As shown above, the treatment for whooping cough varied from text to text in the domestic settings, confirming Watt's observation that 'every author seemed to have his own particular remedy to which he trusted, without knowing why it was prescribed, or how it operated'.[59] This supports the physicians' views that whooping cough was well recognised but little studied. It also suggests a reason why each of the domestic texts offered different remedies. However, remedies for other conditions, such as smallpox or dropsy, were not consistent within the pages of these books either. Medicine as a whole was simply not generalised and consistent during the eighteenth century. There was no recognition of how each remedy cured whooping cough, because there was no knowledge of which parts of the body were affected by whooping cough or how they were affected.

Whooping Cough in a Professional Setting

The physicians to be discussed in this article each advocated different treatments for whooping cough. Nicholas Culpeper, in his seventeenth-century text *Complete Herbal*, wrote very little on whooping cough and the remedy for it. He offered only the briefest of directions. Culpeper's remedies for all ills are humoral in nature, and his suggested treatment for whooping cough is the herb thyme. He stated that thyme was a 'noble strengthener of the lungs', and that there was 'scarce[ly] a better remedy growing for that disease in children which they commonly call

[57] Newton, *The Sick Child*, p. 84.
[58] Buchan, p. 227.
[59] Watt, p. vii.

the chin-cough, than it is'.[60] According to Culpeper, thyme purged the body of phlegm and was an excellent remedy for shortness of breath. However, he does not mention any of the other symptoms that were associated with whooping cough, such as the cough itself, nor the fever that may or may not be present. Culpeper's concern lay purely with purging the body of phlegm.

The use of purgatives and evacuative ingredients in treatments for whooping cough was common in the eighteenth century. In 1726, Hancocke quoted Drs Willis and Sydenham on the treatment of whooping cough. Willis suggested that a specific of cup-mosse was an acceptable cure for whooping cough, or to put the child into a 'sudden fright'. Despite quoting this remedy, Hancocke disagreed with it; he worried that the remedy may have ended up being worse than the disease and could put the child into incurable fits. Willis' other recommendations concerning whooping cough were largely purgative, with purging and vomiting the two main remedies. In addition, he suggested blistering, particularly at the nape of the neck, behind the ears, or on the inside of the arms near the armpits. When these blisters dried up, new ones were to be made in other places. Sydenham also advocated the evacuative approach, with bleeding and a long course of purging recorded as his recommendations. However, Hancocke again disagreed, and questioned how it would have been possible to make a child stick to this regime. Hancocke instead advised that a 'spoonful of flowers of sulphur boiled in a quart or three pints of water, and a small glass of it taken morning or evening would do better'.[61]

Bleeding and vomiting were also methods used by physicians to rid the body of the phlegm that caused whooping cough. If vomiting was to be induced, rather than brought on naturally through the cough, ipecacuanha, camomile tea or luke-warm water were to be used.[62] Buchan clearly felt that the humoral balance needed to be restored, and that by taking the actions of bleeding and vomiting the illness would clear. The non-naturals were also important in the

[60] Culpeper, p. 258.
[61] Hancocke, pp. 118-19.
[62] Buchan, p. 364.

treatment of whooping cough, according to Buchan. He suggested a change of air should be made as soon as whooping cough was diagnosed, despite the highly infectious nature of the illness.[63] Buchan claimed that a bad diet, unwholesome air and too little exercise were the main causes of whooping cough. Therefore, a change of air would immediately remove toxins from the air and release the patient from the disease.

Buchan's advocacy for a change of air was practised by the Foundling Hospital's branch institutions. Indeed, Buchan himself was a medical attendant at the Ackworth (Yorkshire) branch of the Foundling Hospital. Records from the Shrewsbury and Chester branch hospitals, dated to the 1760s, indicate that children were 'sent out for the health'. These children were likely to have been suffering from whooping cough.[64] Although few treatment records for the Foundling Hospital are available, whooping cough caused around six per cent of Foundling deaths in the eighteenth century, compared with 19 per cent for smallpox and 14 per cent for fevers.[65] Concern was shown at the Foundling Hospital over the incidence of the disease, and the isolation of affected children was recorded. However, this practice was not unique to whooping cough. Children with all types of infectious illnesses were isolated, although they were isolated together.[66]

Buchan wrote that 'most diseases of children are infectious, nor is it at all uncommon to find the chin-cough prevailing in one town or village, when another, at a very small distance, is quite free of it'.[67] Despite this, it is unclear whether whooping cough was universally known to be infectious. Children from the Foundling Hospital were placed with nurses in the countryside and were inspected regularly. Whooping cough was one of the main conditions recorded in

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[63] Ibid. p. 363.
[64] London Metropolitan Archives (LMA) A/FH/D/02/012 'Register of children (from Shrewsbury) Sent out for their health'; LMA A/FH/D/04/004 'List of sicknesses at Chester'.
[65] Levene, *Childcare, Health and Mortality at the London Foundling Hospital*, p. 156.
[66] LMA A/FH/A/18/004/002 'Weekly list of the sick, the Brill, St Pancras'.
[67] Buchan, p. 226.

these children.[68] Whooping cough was also one of the conditions that would interrupt the experiments undertaken by the hospital apothecary, Robert McClellan, which used Powis Wells water in an attempt to cure various skin and eye conditions.[69] Although the use of Powis Wells water was unlikely to have had any positive or negative effect on whooping cough, the presence of the condition was enough to have sufferers removed from the experiment.

Although John Burton agreed with Buchan about the importance of restoring the humoral balance, he disagreed with Buchan's advocacy of vomiting and bleeding and noted the weakness of the patients. Burton's text on the non-naturals indicates his humoral approach to various illnesses through its title. Burton also deemed a build-up of phlegm within the lungs and bronchia as the main cause of whooping cough, although (as noted above) not every physician agreed that whooping cough originated in the lungs. His referrals to the viscid humour when discussing evacuations again point to the humoral causes of whooping cough, and formed the basis of Burton's recommended treatment. Purging, and the use of diuretics, were both recommended by Burton in his cure, although he stopped short of advising the use of vomits because 'it commonly shook [the patient], and made 'em cough the more, and the last, because it was contrary to the indication of cure, notwithstanding it being the greatest part of the common method of treating them at this time'.[70] Bleeding, Burton suggested, caused the illness to continue for much longer.[71] Therefore, whilst Buchan advocated bleeding, purging and vomiting, Burton was much more conservative in his views on this type of humoral treatment. Whilst Buchan insisted that the size, age, and constitution of the individual children should be taken into account before these remedies were performed, Burton labelled them dangerous and disregarded them all together.

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[68] LMA A/FH/A/29/003/001 'Reports of the children at Nurse', 1798.
[69] LMA, A/FH/A/18/009/001 'Apothecary's notes (in English) on treatment with the use of Powis Wells Water', 1759-1762.
[70] Burton, p. 350.
[71] Ibid. p. 349.

George Armstrong (1719-1789), founder of the Dispensary for the Infant Poor in London, held similar views to those of Buchan, although he was not as robust when it came to bleeding his patients. In his *Essay on the Diseases Most Fatal to Infants*, Armstrong discussed the case of a young girl, just under two years of age, who was 'violently seized' by the whooping cough and also suffered from measles.[72] Armstrong noted that the girl had been bled once but, due to her weakness, he decided against bleeding her for a second time. When he opened the child up after her death, Armstrong regretted not having bled her for the second time as he found 'the lungs, especially in the back and lower part, had been a good deal inflamed, but without any appearance of suppuration, or mortification'.[73] Therefore, Armstrong did advocate techniques to restore the humoral balance in the treatment of whooping cough prior to his experiments with hemlock later in the century.[74] Armstrong went on to describe further the treatment he gave to other children suffering from the whooping cough, again suggesting his advocacy of humoral techniques through the use of 'antimonial mixture by way of puke and vomits'. On a child of eight, Armstrong used a mixture of ipecacuan wine and oxymel of squills.[75] This concoction cleaned the stomach of phlegm, but had no effect upon the cough. The treatment was repeated several times but failed to produce results. Armstrong ended the whooping cough section of his text with the following note: 'the hooping-cough is a very obstinate complaint, and even the change of air, so much celebrated in this disease, though in some patients, it had remarkable good effect, yet to others it affords no sensible relief'.[76] This implies that remedies,

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[72] George Armstrong, *An Essay on the Diseases Most Fatal to Infants: To Which Are Added Rules to Be Observed in the Nursing of Children, with a Particular View to Those Who Are Brought up by Hand* (London: Printed for T. Cadell, 1767), p. 92. Whooping cough did not often occur alongside other illnesses, although it was regularly linked with 'cough' in the Bills of Mortality. Dobson (p. 348) identified cases of whooping cough which were linked with dysentery. A total of 27 children were identified as suffering with dysentery in 1765, and most of them had secondary complications from whooping cough. Eight of the 27 children died, but the causes of death were not recorded. Comorbidity was acknowledged in contemporary records, as other diseases were often linked together; for example, smallpox and measles, and leprosy and scald head.

[73] Armstrong, *An Essay on the Diseases Most Fatal to Infants*, p. 93.

[74] Armstrong's experiments with hemlock will be discussed in further detail below.

[75] Armstrong, *An Essay on the Diseases Most Fatal to Infants*, p. 94.

[76] Ibid. p. 95.

including both drugs such as hemlock and herbals that could have been made within the home, worked for some patients but not for others. It also offers a compelling reason as to why such a varied collection of remedies appeared across the domestic and medical texts of the period. That remedies worked for some and not others is also indicative of beliefs that illnesses manifested differently in different bodies.

Physician Thomas Kirkland (1721-1798) suggested the use of cantharides, a diuretic, as a treatment for whooping cough.[77] He indicated that this remedy, either taken inwardly or outwardly applied, was an effective treatment. He also stated that the use of purging medicines 'especially emetic tartar, &c. by clearing the *primae viae*', were favourable treatments.[78] The use of purging medicines demonstrates the perceived importance of clearing phlegm out of various parts of the body in the treatment of whooping cough. There was, therefore, a continuation of the humoral treatment over the course of the eighteenth century.

William Brownrigg (1712-1800), physician to the town of Whitehaven in Cumbria, wrote that in the winter of 1731-32 whooping cough became an epidemic and was 'more or less fatal as the weather altered'.[79] Brownrigg copied out the section on whooping cough from Burton's *Treatise on the non-naturals* and, using Burton's remedy, he saved seventeen out of the nineteen children in Whitehaven to have contracted the disease. The two that died were the subjects of detailed descriptions within Brownrigg's casebooks. He recorded that the deceased had either been sick with another illness or had previously recovered then relapsed. Brownrigg took pains to note that the children who recovered did so through the use of effective medicine, not by the change of temperature. When using a different remedy for the treatment of whooping cough,

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[77] Thomas Kirkland, *Animadversions on a Late Treatise on the Kink-Cough. To Which Is Annexed, An Essay on That Disorder* (London: R. Baldwin, and J. Bew, 1774), p. 22.
[78] Kirkland, p. 23.
[79] William Brownrigg, *The Medical Casebook of William Brownrigg, M.D., F.R.S. (1712-1800) of the Town of Whitehaven in Cumberland.*, ed. by Jean E. Ward and Joan Yell (London: Wellcome Institute for the History of Medicine, 1993), pp. 69-70. Unless otherwise stated, all quotes in this passage are taken from this source.

Brownrigg took the age of the children into account when providing remedies for them, as demonstrated in the remedy for the two daughters of Reverend Dr Ashley:

> Electuary of Peruvian bark 1 oz; Root of elecampane 1 ½ scruples; wormwood 1/2oz; Boil for half an hour in spring water and make up 1 pt, adding at the end: Gum Arabic 1 ½ scruples; liquorice root 2 ½ scruples; aniseed seeds ½ scruple. Strain and add tincture of saffron 1 scruple. Make into an apozem.

This remedy was used after the two girls had been bled by leeches. Brownrigg explained that the elder daughter, aged eight, took about one ounce of this mixture, and the younger, aged six, took six scruples of the mixture, both every three hours with the following: 'tincture of cantharides ½ oz.'. It would appear that the remedy did not work in the case of these two girls as Brownrigg added a faint 'but it was in vain' to the page.

The different remedies prescribed for individuals with whooping cough were never completely effective. That physicians like Brownrigg changed their recipes depending on the child, whilst others recommended the same remedies regardless, further illustrates that the treatment for whooping cough was largely experimental. No single treatment was universally accepted. This further emphasises the point that in the eighteenth century there was little standardisation of medical care, for children or adults, either in general or specifically in the case of whooping cough. The sheer variety of remedies discussed in this article demonstrates how diverse the treatment of whooping cough was during the eighteenth century. Authors of domestic receipt books used treatments that they knew worked, or that they had been told worked by trusted friends or family. Physicians pursued several treatments for whooping cough, but by the end of the eighteenth century there was still no standard, accepted approach to tackling the disease. The evidence provided above demonstrates that the disease was not fully understood by contemporaries.

Hemlock as a Treatment for Whooping Cough

The use of hemlock as a cure or treatment for whooping cough was a contentious issue during the eighteenth century. Hemlock had not been a traditional remedy for whooping cough, for children or adults, prior to the eighteenth century. The dangers it posed were well known. Culpeper warned that hemlock was 'very dangerous, especially to be taken inwardly'.[80] However, physicians writing later in the eighteenth century openly extolled the virtues of the plant. Armstrong and Butter both claimed that hemlock was the one medicine that could treat whooping cough and control the high mortality rates caused by the disease. Butter was first to advocate the use of hemlock and Armstrong followed Butter's advice. Both men engaged in debate over the use of hemlock; Armstrong responding to criticisms made by John Coakley Lettsom in the *Gentleman's Magazine*, whilst Thomas Kirkland wrote a scathing rejoinder to Butter's *Treatise on the Kinkcough*. Lettsom believed that hemlock was an unacceptable treatment for whooping cough, particularly when issued to child patients. Kirkland, however, accepted that 'we must… see whether the evidence you [Butter] produce will support the character you give it [hemlock]'.[81] Therefore, although wary of the dangers of hemlock, Kirkland was sufficiently open minded to await the results of Butter's work.

Butter was the first of the physicians discussed in this article to use hemlock as a treatment for whooping cough. His treatise on the subject was published in 1772. He was convinced of the spasmodic nature of whooping cough, and decided to use hemlock as a known and effective anti-spasmodic treatment.[82] Butter described twenty cases in which hemlock was used to assist in the treatment and cure of whooping cough. Both children and adults were treated, with varying dosages prescribed according to the severity of the disease and the existence of other

[80] Culpeper, p. 128.
[81] Kirkland, p. 22.
[82] Butter, p. 60.

afflictions within the patients.[83] Butter openly called his work an experiment, but advised physicians in Scotland to use the remedy due to its effectiveness.[84] Armstrong was less encouraging, although he did use hemlock to treat the children at his Dispensary of the Infant Poor in London. Armstrong wrote that his hemlock remedy was not as effective as Butter claimed, but that the parents of his patients believed the treatment worked. Furthermore, only five per cent of Armstrong's patients died when he used hemlock as a treatment.[85] The treatment that Armstrong gave before he began to use hemlock resulted in the deaths of only two per cent of his patients, a very low rate of mortality if the debate surrounding the use of hemlock is taken into account. If Armstrong felt that his previous treatment, outlined in his *Essay on the Diseases Most Fatal to Infants*, was better than Butter's hemlock remedy, it is unclear why he chose to treat so many children with hemlock.

Hemlock was not administered to any of the patients on its own. It was always mixed with other ingredients, and yet again these ingredients varied according to the physician and to the patients' constitutions. For a three-year-old child who had recently suffered from measles, Butter gave the following mixture: 'take of spring water, an ounce and a half; lemon-juice, an ounce; syrup of sugar, half an ounce; salt of tartar, forty grains; hemlock-mass, a grain: mix them'. In addition to this, manna was given with a mixture of two grains of hemlock-mass, and 'in a day or two a third grain was to be added'.[86] For a one year old, Butter recommended the following recipe: 'Take of spring water, two ounces and a half; syrup of pale roses, half an ounce; hemlock-mass, one grain: mix them.' The mixture was continued with an 'addition of

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[83] Ibid. pp. 60-157.
[84] Ibid. p. 63.
[85] George Armstrong, *An Account of the Diseases Most Incident to Children, from the Birth till the Age of Puberty; with a Successful Method of Treating Them. To Which Is Added, an Essay on Nursing: With a Particular View to Children Who Are Brought up by Hand. Also a Short General Account of the Dispensary for the Infant Poor. A New Edition, with Several Additions. This Edition Contains, amongst Other Additions, Three Cases of the Hydrocephalus Internus, Successfully Treated.*, 2nd edn (London: T. Cadell, 1783), pp. 106-7.
[86] Butter, p. 65.

two drams of the syrup, and a third grain of hemlock [the second being added earlier]'.[87] It is unclear why the remedy differed between patients. It could simply be due to the availability of seasonal ingredients at the time the remedy was made up, or the age or general constitution of the child may have been taken into account but not recorded.

Armstrong claimed that all of the patients who died after taking hemlock did so as the result of a previous sickness. Conditions that Armstrong mentioned included fever, fits and coughs, and the weakness of the limbs. These conditions match many of the symptoms that Watt, Butter and Buchan noted to be early indications of whooping cough. Therefore, it is possible, although not certain, that these patients may have suffered from severe cases of whooping cough rather than whooping cough alongside other illnesses. The fact remains that neither of these physicians prescribed hemlock alone, as it was well known to be a dangerous element when consumed by itself. Hemlock was always diluted, in Armstrong's case with water and sugar, and in Butter's case with spring water, lemon-juice and sugar amongst other things. The dilution of the hemlock may explain the lack of danger that appeared with these treatments.

Armstrong's use of hemlock to treat whooping cough in his dispensary was not as deadly as its critics feared it would be. Using Armstrong's own numbers, by 1777 he had treated 375 children suffering from whooping cough with hemlock. As stated above, only seventeen had died (five per cent).[88] By 1783, he claimed to have treated 732, of which twenty-five died (three per cent).[89] Whether or not whooping cough was the cause of death in all of these cases, these results were impressively low. Furthermore, some of the children who died were, in Armstrong's opinion, weak and likely to die anyway. He listed nine that were 'very unfavourable cases', often suffering from illnesses other than whooping cough.[90] For example, a child aged seven weeks had been ill with 'convulsions, beside the hooping-cough for three weeks, before

[87] Ibid. pp. 70-1.
[88] Armstrong, *An Account of the Diseases Most Incident to Children*, p. 107.
[89] Ibid. p. 116.
[90] Ibid. p. 107.

application was made to the Dispensary'.[91] Another child, aged seven months, was 'wasted to a skeleton with the cough and a hectic fever, which he had laboured under for two month before the parents applied to the Dispensary'.[92] The other children were not discussed in detail, and it is unclear from Armstrong's notes whether these children died as a result of: the whooping cough; the hemlock given to them; a combination of the two; or due to other factors. Armstrong's list of children who were 'unfavourable cases' gives the impression that, had medical advice been sought sooner for the children, they might have survived the hemlock experimentation. Several of the children had been ill for some time before the parents had sought help from the Dispensary, or had suffered from weaknesses since birth. Armstrong was the only person who knew exactly how many children died under his care. His original records have not been located, all that survives is his *Account of the diseases most incident to children*. This publication represents the only written record of these statistics, and may not accurately replicate the number of patients Armstrong treated for whooping cough.

Although Armstrong was attacked for his experiments in the use of hemlock, it was Butter who first attempted to use hemlock and stated that his use of it was experimental. Armstrong followed Butter's experiments, examined the results, and decided to follow suit. The possible reason why Armstrong was so viciously attacked by Lettsom may lie in the ways in which Armstrong undertook his trials; the fact that he experimented on poor children who could not have afforded medicine in any other way may have raised moral questions for Lettsom. Although the moral aspect of experimenting on children was not explicit in the published debates on hemlock, in terms of experimentation in the nineteenth and twentieth century it has been noted that children in institutions were more likely to be the subject of medical

[91] Ibid. p. 108.
[92] Ibid. p. 107.

experiments than those raised outside of institutions.[93] In addition, when discussing the use of hemlock for the treatment of whooping cough, Ashley Mathisen argues that 'innovative medical practice involving children was perceived as excessively dangerous, carrying a risk which did not justify the use of a new treatment'.[94] The physicians themselves had to acknowledge and assess the risks before they undertook trials on children. Lettsom clearly felt that the risk of death for these children was not worth the potential cure that the experiment could lead to. Although out of the three medical trials considered by Mathisen in her article the use of hemlock was the most dangerous, the number of subjects who died was still low, particularly in comparison with the number of whooping cough deaths recorded by Watt in Glasgow. Armstrong defended his use of hemlock as a treatment for whooping cough by arguing that the numbers of dead were so high because parents had become more efficient at reporting their children's deaths. He implored that no medicine should be dismissed without proper trial.[95] Armstrong, therefore, defended a remedy that he himself felt was less effective than his previous remedies. Yet he refused to give up the experiment as he felt he was helping the poor. The treatment Lettsom used for whooping cough was also trialled by Armstrong, with less than favourable results. This led Armstrong to continue his use of hemlock for those suffering from whooping cough.[96]

Kirkland's attack on Butter's work took a different form to Lettsom's condemnation of Armstrong. Where Lettsom concentrated on the risk posed to children, Kirkland was content to simply point out that Butter was wrong on several points, not just on the use of hemlock as a cure or treatment for whooping cough. A key aspect of Kirkland's argument revolved around

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[93] Susan E. Lederer, 'Orphans as Guinea Pigs: American Children and Medical Experiments, 1890-1930', in *In the Name of the Child: Health and Welfare, 1880-1940*, ed. by Roger Cooter (Oxon: Routledge, 1992), pp. 96–123, (p. 96).
[94] Ashley Mathisen, 'Mineral Waters, Electricity, and Hemlock: Devising Therapeutics for Children in Eighteenth-Century Institutions', *Medical History* 57:1 (2013): 28–44, (p. 41).
[95] George Armstrong, 'Reply to Dr Lettsom's Observations on some Passages in Dr Armstrong's Diseases of Children', *Gentleman's Magazine*, 47 (1777), 633-5, cited in Mathisen, p. 42.
[96] Armstrong, *An Account of the Diseases Most Incident to Children*, p. 112.

Butter's belief that whooping cough was spasmodic. Kirkland asserted that Butter had not proved his case sufficiently. Therefore, his use of hemlock should not encourage other medical personnel to follow suit.[97] However, Butter argued, if hemlock were to be used as an opiate it could allay 'that increased irritability, which the cause of every cough in a greater or lesser degree produces, and which often will occasion frequent coughing for some time after the primary disease is removed', a reaffirmation that hemlock could be a useful ingredient when used in conjunction with other methods.[98] Finally, Kirkland stated that: 'what you say, Sir, has been asserted about the cure of the kinkcough, may with equal truth be asserted of every disorder known, as we have not *a certain* cure for any of them'.[99] Kirkland essentially told Butter and other readers that there were no guaranteed cures for any disease. Whooping cough was not unique in this regard, hence the number of different remedies suggested by physicians.

However, it is interesting to note that whilst Lettsom was attacking Armstrong, and Butter was actively promoting the use of hemlock, Buchan – although indicating that he had not seen any reliable results – was also using the drug without anything approaching the backlash that Armstrong experienced. Even 40 years later Watt was using hemlock, raising questions as to whether it genuinely was as dangerous as Culpeper and Lettsom claimed. The continued use of the drug implies that hemlock was not a dangerous ingredient when used as part of a treatment for whooping cough, provided it was diluted and not given as a remedy on its own.

Conclusion

Whooping cough was a prevalent disease in the eighteenth century. Despite its commonness, physicians of the time claimed that it was a disease that had been largely ignored, left to the care of 'old women and quacks'. This article has demonstrated the inaccuracy of this remark. Domestic receipt books show that women treated whooping cough in the home. Physicians'

[97] Butter, p. 60; Kirkland, p. 22.
[98] Butter, p. 60.
[99] Kirkland, p. 21. Emphasis in original.

texts reveal that whooping cough was a condition that could be, and was, treated by professional medics. In the eighteenth century, most medical treatments were experimental, in that they were trial and error. However, in the case of hemlock, Butter explicitly uses the word experimentation in the preface of his text when discussing his treatment of whooping cough. Armstrong did not expressly use the term experiment. However, the records he kept of children treated with hemlock, which contained statistics on those who did and did not survive, suggest that this was more of an experiment than simple trial and error. The evidence of experimentation indicates that there was an accepted need to find a treatment that worked for whooping cough. The use of hemlock was controversial, but Armstrong in particular received more criticism of his work than appears to have been justified based on the outcome of his trials. Although his original notes and casebooks no longer exist, the numbers speak for themselves. By the nineteenth century, whooping cough had become a disease that had been studied, due both to the increasing death rates from the disease and to the publicity given to the hemlock experiments. However, despite the fact that whooping cough was a disease that had received attention, there was still a lack of standardisation in the treatment and understanding of the disease itself. Whilst the eighteenth century was an important time for the development of medicines to treat whooping cough, by the time Robert Watt wrote in 1813 there was still no formalised, universally accepted treatment for the disease.

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