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*Virginia Commonwealth University*

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“To Conceive with Child is the Earnest Desire if Not of All, Yet of Most Women”: The  
Advancement of Prenatal Care and Childbirth in Early Modern England, 1500-1770

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Arts at  
Virginia Commonwealth University.

by

Victoria E.C. Glover

Master of Arts in Teaching Secondary History, Georgia Southern University, 2015

Bachelor of Arts in History, Georgia Southern University, 2013

Director: Dr. Brooke Newman,

Associate Professor of History and Associate Director of the Humanities Research Center

Virginia Commonwealth University

Richmond, Virginia

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## Abstract

“TO CONCEIVE WITH CHILD IS THE EARNEST DESIRE IF NOT OF ALL< YET OF MOST WOMEN”: THE ADVANCEMENT OF PRENATAL CARE AN CHILDBIRTH IN EARLY MODERN ENGLAND, 1500-1770

By Victoria E.C. Glover, Master of Arts

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Arts at Virginia Commonwealth University.

Virginia Commonwealth University, 2018

Director: Dr. Brooke Newman, Associate Professor of History and Associate Director of the Humanities Research Center

This thesis analyzes medical manuals published in England between 1500 and 1770 to trace developing medical understandings and prescriptive approaches to conception, pregnancy, and childbirth. While there have been plenty of books written regarding social and religious changes in the reproductive process during the early modern era, there is a dearth of scholarly work focusing on the medical changes which took place in obstetrics over this period. Early modern England was a time of great change in the field of obstetrics as physicians incorporated newly-discovered knowledge about the male and female body, new fields and tools, and new or revived methods into published obstetrical manuals. As men became more prominent in the birthing chamber, instructions in the manuals began to address these men as well. Overall these changes were brought about by changes in the medical field along with changes in culture and religion and the emergence of print culture and rising literacy rates.

## Introduction

This thesis analyzes twenty-nine medical manuals published in England between 1500 and 1770 in an attempt to trace developing medical understandings and prescriptive approaches to conception, pregnancy, and childbirth. Overall, this study seeks to show how English practices and traditions regarding conception, pregnancy, and childbirth developed and evolved in response to medical, scientific, and religious transformations that took place over the course of the early modern era. These include changing ideas regarding anatomy during the Renaissance (1300-1600), the creation of new medical fields and obstetrical tools such as embryology and obstetrical forceps during the Scientific Revolution (1550-1700), and the expanding role of men in the birthing chamber in the eighteenth century. Tracking midwifery manuals alongside the significant changes which occurred in the medical field between the sixteenth and mid-eighteenth centuries illuminates how long it took medical ideas concerning conception, pregnancy, and childbirth to reach the general public. Analysis of English midwifery manuals over the *longue durée* demonstrates what ideas were commonly held by physicians and midwives and what ideas were anomalies of their time.

By focusing exclusively on published medical manuals written in the vernacular, this thesis offers insight into the evolution of prescriptive medical practices in England regarding female anatomy, conception, pregnancy, and the treatment of laboring mothers. While women may have deviated from the advice of midwives and physicians in their everyday lives, medical manuals grant modern readers access to the prescriptive world of early modern obstetrics. Although this advice may have been ignored, physicians' prescriptions enable historians to track generally accepted medical practices over time. In the absence of an extensive collection of surviving early modern English women's diaries and journals, medical manuals allow us to



understand how medicine relating to conception and childbirth changed over time in response to intellectual, religious, and scientific currents.

### **Argument**

This study argues that the changes to medical knowledge, religion, and the practice of midwifery greatly affected the way in which the authors of midwifery manuals discussed conception, pregnancy, and childbirth. Because physicians had greater access to human bodies for dissection in the sixteenth, seventeenth, and eighteenth centuries, they gained new knowledge concerning how the body functioned and what part each organ in the body played. As the field of anatomy progressed physicians discarded theories which had been held for millennia as their personal observations contradicted the writings of previous authors. This deeper investigation into the human form led authors to change their theories on the reproductive differences between men and women as well as the parts each gender played regarding the act of conception and its antithesis barrenness.

During this same period the religious world of England was turned upside down when Henry VIII broke from the Roman Catholic Church and the pope in the 1530s in order to secure a legitimate male heir. This led to the creation of the Church of England, headed by the current king or queen of England. At the same time the Protestant Reformation from central Europe spread to England leading to the splintering of English Protestants into various factions. These breaks within English faith practices led to the rejection or modification of “popish” practices and the adoption of new practices by the end of the sixteenth century. Sixteenth-century religious upheavals affected all aspects of life including how women dealt with barrenness, the act of giving birth, and the return of new mothers to society through ritual purification.

Finally, the early modern era saw a dramatic change in the field of obstetrics and midwifery as a once female-dominated occupation was challenged by men who had better access to medical education that female midwives did not. These men also had access to newly-invented tools and improved practices, such as obstetrical forceps, which gave them the ability to preserve the lives of more infants and mothers who would have died in centuries past.

The early modern era was a time of great change in the field of obstetrics as physicians incorporated newly-discovered knowledge about the male and female body, new tools such as obstetrical forceps, and new or revived methods such as podalic version into published obstetrical manuals. As men entered and became more prominent in the birthing chamber, instructions in the manuals were no longer addressed to women and midwives alone, but to male practitioners as well. These changes were brought about during the sixteenth, seventeenth, and eighteenth centuries and were in response to changes taking place in the medical field as a response to new knowledge along with cultural and religious changes occurring at that time.

### **Sources and Methodology**

This thesis offers a case study of medical manuals published between 1500 and 1770, a period which encapsulated the reigns of the Tudor, Stuart, and Hanoverian monarchs. The majority of these texts are printed books of varying lengths and topics. Some manuals like *The General Practice of Physick* by Christof Wirsung or *A Short Compendium of Chirurgery* by John Shirley were general medical manuals with information for every part of the body and ailment. Other manuals were created for the use of women and midwives specifically. All these manuals were located in the Early English Books Online and Eighteenth Century Collections Online databases where microfilmed copies of the manuals were available for download and study.

Several of these manuals were very popular as evidenced by the printing of multiple editions over the decades. One such example is Thomas Raynalde's English translation of Eucharius Rosslin's German book, *The Birth of Mankynde*, which saw thirteen printings between 1545 and 1654. Rosslin's was not the only manual to be translated into English. Translations of manuals from other countries on the Continent, including France and the Netherlands, were also popular. While the majority of the manuals were written by men, there were at least three texts written by women and numerous texts from anonymous authors or by an author using a pseudonym who may have been male or female. Two of the manuals date from the sixteenth century, eleven from the seventeenth century, and fifteen from the eighteenth century through the year 1767. While many of the authors wrote only one midwifery manual, several authors such as William Smellie, Jean Astruc, Nicolas Culpeper, and Hendrik van Deventer published multiple medical books throughout their careers. With the exception of Nicolas Culpeper, authors who wrote at length on midwifery during the eighteenth century were all physicians. During this era, as childbirth was increasingly considered a medical, rather than natural, event in which the threat of death could only be averted by the skills of a male physician, male practitioners became more common in the birthing room.<sup>1</sup>

While early modern medical manuals provide key information as to how the authors viewed conception, pregnancy, and childbirth, they do not reveal how the midwives or expectant mothers used these manuals. At most the advice authors presented in the manuals is prescriptive, telling female readers how they could expect to become pregnant, what was or was not considered appropriate for them while pregnant, and what would happen to them during and after childbirth. Beyond this, there is no true way of knowing how precisely early modern women

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<sup>1</sup> Andrew Cunningham and Roger French, *The Medical Enlightenment of the Eighteenth Century*, (Cambridge: Cambridge University Press, 1990) 2.

followed these instructions. Along the same lines, medical manuals---even those written by women---do not offer modern-day readers insight into the emotional experience of early modern pregnancy and childbirth. Instead, they provide details regarding physical changes and problems that a pregnant or laboring woman might experience.

### **Historical Era**

At the start of the sixteenth century, medicine both in England and in Europe more broadly was based on the writings of the later Roman Greek-speaking physician Galen, who had lived over a thousand years prior, and his concepts of humors.<sup>2</sup> Galenic knowledge travelled to England beginning in the eleventh century through trade routes, disseminated by Crusaders returning from the Holy Land.<sup>3</sup> According to Galenic principles, human health and illness were based upon the balance of four different humors: blood, phlegm, yellow bile, and black bile. Although every person had all of these substances in their bodies, each person had a unique balance of these humors which made up their “complexion.” This complexion defined their overall health and determined how their body supposedly worked. As long as an individual’s humors remained in their proper balance, s/he would remain healthy. If, however, these humors fell out of balance as a result of diet, activity, or environment, then the person would become ill. Only when individuals restored their bodies to the proper balance of humors could they return to an ideal state of health.<sup>4</sup> The Galenic understanding of humors and complexions prevailed in early modern England and informed the way that physicians prescribed treatments and remedies for illness and pregnancy.

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<sup>2</sup> De Lamar Jensen, *Renaissance Europe: Age of Recovery and Reconciliation*, (Toronto: D.C. Heath and Company, 1992), 204-205.

<sup>3</sup> Peter Murray Jones and Lea T. Olsan, “Performative Rituals for Conception and Childbirth in England, 900-1500,” *Bulletin of the History of Medicine* 89, (2015) 407.

<sup>4</sup> Jensen, 204-205.

Another aspect of Galenic medicine prevalent in early modern England included ideas regarding the differences between men and women. Although physicians assumed that men and women had the same organs, they argued that women could not retain heat in their bodies; thus women's reproductive organs remained inside them.<sup>5</sup> Because of the Roman Catholic Church's disapproval of human dissections, Galenic understandings would not be disproven until Andreas Vesalius published his *De Humani Corporis Fabrica (On the Structure of the Human Body)* in 1542, which included complete and accurate descriptions and images of the organs, functions, and parts of human anatomy.<sup>6</sup> Changes in medical knowledge affected the way many midwives and physicians performed their jobs. In some cases, physicians and scientists invented or improved methods of treatment that benefited women. Medical texts or manuals conveyed these new methods to those attending an expectant woman or her midwife.

Medical manuals have played an important role in the practice and study of medicine since the time of Hippocrates over two thousand years ago. The first obstetrics textbook was written by the Greek author Soranus in the early part of the second century AD. This document then became the basis for the Roman physician Moschion's manuscript, *De Mulierum Passionibus*, in the sixth century, though no new information regarding the practice of obstetrics was included. Although the fields of obstetrics and gynecology began to gain a foothold in scientific medicine through the work of Hildegard of Bingen and Trotula of Salerno in the eleventh and twelfth centuries,<sup>7</sup> there were very few manuals available to the general population and the information provided had not changed since the sixth century. The stagnation of medical

<sup>5</sup> Anthony Fletcher, *Gender, Sex, and Subordination in England 1500-1800*, (New Haven: Yale University Press, 1995), 34.

<sup>6</sup> Jensen, 206.

<sup>7</sup> Paul Strathern, *Brief History of Medicine: From Hippocrates to Gene Therapy* (New York: Carroll and Graf Publishers, 2005), 49; Monica H. Green, ed., *The Trotula: A Medieval Compendium of Women's Medicine*, (Philadelphia: University of Pennsylvania Press, 2001).

knowledge continued for another three hundred years until the advent of moveable type allowed new ideas to be printed and dispersed quickly to a larger audience, though these changes did not occur immediately.<sup>8</sup>

The first printed obstetrics manual of the early modern era came from the German Eucharius Rosslin in 1513 by the title of *Der Swangern Frawen und Hebammen Rosengarten*. However, like Moschion, the majority of Rosslin's text came from Soranus, Galen, Hippocrates and an unknown Italian author, reviving the ancient knowledge without adding any new information.<sup>9</sup> *Der Rosengarten* proved successful enough and by 1540 Thomas Raynalde had translated it into English. When new ideas were discovered regarding the human body, they would often be added to new editions of medical manuals. After the publication of Vesalius' *De Humanis Corporis Fabrica*, Raynalde added a new chapter and illustrations reflecting, if not copying, Vesalius' discoveries.<sup>10</sup>

While originally these medical manuals were printed in Latin solely for educated physicians and midwives, by the sixteenth century manuals were being printed in English for lay men and women as a consequence of the growing literacy rate, which by the end of the seventeenth century saw one in two men and one in three women capable of reading the English language.<sup>11</sup> Because of the growth of literacy, physicians and midwives began writing their own manuals to share with others. The reasons for this were twofold. First, the books were created to advertise to colleagues the methods one used, and second, they were used to build up a collection

<sup>8</sup> Harold Speert, *Iconographia Gyniatrica: A Pictorial History of Gynecology and Obstetrics* (Philadelphia: F.A. Davis Company, 1973), 511.

<sup>9</sup> Speert, 511-513, and Eucharius Rosslin, *The Birth of Mankind : Otherwise Named, the Woman's Book*. ed. Elaine Hobby, (New York: Routledge, 2009) xvii.

<sup>10</sup> Rosslin, xvii .

<sup>11</sup> Mary E. Fissell, *Vernacular Bodies: The Politics of Reproduction in Early Modern England*, (Oxford: Oxford University Press, 2004) 7.

of knowledge and practices for future comparison and classification, thus leading to better medicine.<sup>12</sup>

The proliferation of vernacular medical manuals could not have come at a better time as the population of England was still struggling to recover from plague epidemics of the fourteenth century. At the start of the sixteenth century, only one in two children survived to the age of twenty, resulting in couples having more children in hopes that through one of them their family line would continue.<sup>13</sup> This was especially important for the propertied elite; the average level of childlessness was close to nineteen percent in the years between 1590 and 1740.<sup>14</sup> According to early modern English society, a woman's most crucial role was that of a wife and mother. The only other respectable option for a woman was to join the church and become a nun until the English Reformation became settled policy during the reign of Elizabeth I (1558-1603). Sixteenth-century social norms following the Reformation dictated that it was the responsibility of a woman, whatever her social standing, to marry and conceive a male heir for her husband. It was in part because of this pressure that, as the midwife Jane Sharp wrote in 1671, "[t]o conceive with child is the earnest desire if not of all yet of most women."<sup>15</sup> A woman's failure to produce children suggested God had cursed her, and could result in the loss of social status.<sup>16</sup> A woman who believed she was having trouble conceiving might see a midwife in order to determine what she should do to better her chances of becoming pregnant.

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<sup>12</sup> Jacques Gelis, *History of Childbirth*, trans. Rosemary Morris, (Boston: Northeastern University Press, 1991) xiv.

<sup>13</sup> Gelis, xiii.

<sup>14</sup> Linda A. Pollock, "Experiences of Pregnancy," in *Women as Mothers in Pre-Industrial England*, ed. Valerie Fildes, (New York: Routledge, 1990) 39.

<sup>15</sup> Jane Sharp, *The Midwives Book, or, The Whole Art of Midwifry Discovered*, (London, 1671), 93.

<sup>16</sup> Petrina Brown, *Eve: Sex, Childbirth, and Motherhood Through the Ages* (Chichester: Summersdale Publishers Ltd., 2004), 75-76, and Patricia Crawford, "The Construction and Experience of Maternity in Seventeenth Century England," in *Women as Mothers in Pre-Industrial England*, ed. Valerie Fildes, (New York: Routledge, 1990) 19.

Women faced pressure to conceive and bear children from multiple fronts including their family, the church, and society. Both the Roman Catholic and Anglican churches constantly reminded couples that one of their duties to God was to “be fruitful and multiply,” and to engage in sexual relations explicitly for procreative purpose.<sup>17</sup> Although these pressures to multiply would seem to suggest the regular occurrence of large families, the majority of women on average, had only four or five children before menopause.<sup>18</sup> There were several reasons for this including the age at which a woman was married, and the length of time between births, often as a result of prolonged breastfeeding.<sup>19</sup>

Obstetric medical texts helped to guide the mother-to-be through her pregnancy in a manner similar to modern day pregnancy guide books. For example, a survey of five medical manuals used for this study demonstrated that common ideas shared amongst them included: correct female anatomy; conception both in terms of how to achieve it and how to detect it; how to determine whether a woman would have a boy or a girl; the proper conduct of a woman while pregnant to avoid miscarriage; ailments a woman might face while pregnant; natural birth, in which the baby’s head is delivered first; unnatural birth, in which the baby’s head is not delivered first; and postnatal care.<sup>20</sup>

Pregnant women spent the time remaining before the impending birth preparing for the new arrival, as well as preparing themselves for the prospect of death in childbirth. While the precise likelihood of a woman dying in childbirth during the early modern period is unknown, women considered their chance of dying high enough to put their affairs in order and to engage

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<sup>17</sup> Gelis, xi.

<sup>18</sup> Gelis, xii.

<sup>19</sup> Gelis, xiii.

<sup>20</sup> Nicolas Culpeper, 1651; William Sermon, 1671; Francois Mauriceau, 1672; Pierre Dionis, 1719; William Smellie, 1762.



in the necessary preparations such as making winding or burial sheets.<sup>21</sup> Roger Schofield's study of maternal mortality rates in thirteen English parishes concluded that between the years 1550 and 1599, 9.3 out of every 1000, mothers died in childbirth. Over the next century maternal deaths increased to 11.6 out of every 1000 mothers between 1600 to 1649 to 15.7 between 1650 to 1699. The maternal death rate only began to fall again in the period from 1700 to 1749 with 11.3 maternal deaths, and even further to 7.7 deaths during the period of 1750 to 1799.<sup>22</sup> Merry Wiesner further elaborated on this by arguing that the individual maternal mortality rate in England was one percent for each birth, with a combined five to seven percent chance of death during childbirth over the course of a woman's life.<sup>23</sup> This variation in the statistics of maternal death over a period of 250 years demonstrates the importance of examining medical texts over multiple centuries instead of those published closely together or during one particular era.

Because of the fear of maternal death, skilled midwives were hired to help with the delivery of the baby and to keep the mother alive. While midwives would likely have had hands-on experience, some might also carry a medical manual which included the steps to take in the event of a difficult labor or, in a worse-case scenario, how to perform a caesarean section to save the baby in the event of the mother's death while in labor. Even if a woman survived the delivery, there was still the possibility of puerperal or "childbed" fever, which killed many women in the days and weeks after giving birth. Although the biological cause of puerperal fever was not understood to be infectious until the nineteenth century, midwives and physicians still

<sup>21</sup> Fissell, *Vernacular Bodies*, 4.

<sup>22</sup> Roger Schofield, "Did the Mothers Really Die? Three Centuries of Maternal Mortality in 'The World We Have Lost,'" in *The World We Have Gained: Histories of Population and Social Structure*, (Oxford: Basil Blackwell Ltd., 1986), 248.

<sup>23</sup> While most people would think the higher maternal mortality rates would exist further in the past, Wiesner argued that the number of maternal deaths were higher in Victorian England than in early modern England. Merry E. Wiesner, *Women and Gender in Early Modern Europe*, 2<sup>nd</sup> ed., (Cambridge: Cambridge University Press, 2000) 83, 98.

had theories as to how the condition could be treated, and the information as to how treat a fever and other postnatal problems would have been written in the aforementioned manuals.

Thus the distribution of obstetrical manuals could help the many women who were either trying to conceive, were already pregnant, or would soon be in labor. Although medical manuals for commoners had been spreading across England for a century, it was not until the 1650s and the publication of Nicolas Culpeper's *Directory for Midwives* in 1651, that a noticeable change in the language of the texts occurred. Whereas manuals published prior to this had apologetically discussed a woman's reproductive process, Culpeper spoke candidly and included a focus on the male reproductive system. The popularity of Culpeper's *Directory for Midwives* also facilitated the publication of original obstetrical manuals in English, whereas prior to this date the vast majority of English midwifery manuals were translated from another language with minor changes made for their English readers.<sup>24</sup> Culpeper's unapologetic style was influential and the next decade in England saw the printing of more obstetrical medical manuals than had been printed in the previous century.<sup>25</sup>

Because reproduction played such an important role in women's lives, it is necessary to see how the changes in knowledge during the Renaissance, Scientific Revolution, and the eighteenth century shaped ideas regarding conception, pregnancy, and childbirth. While there are a number of important studies concerning early modern pregnancy and childbirth, the vast majority of these texts focus on social interactions, how the Reformation influenced religious beliefs regarding pregnancy and childbirth, or on other commonly held beliefs and traditions. While there have been a large number of studies addressing how medicine as a whole changed over the period of 1500 to 1770, there has not been a study focused exclusively on the use of

<sup>24</sup> Fissell, *Vernacular Bodies*, 5.

<sup>25</sup> Fissell, *Vernacular Bodies*, 5.

early modern medical texts to describe the changes in prenatal, childbirth, and postnatal care in England as a result of new thought processes and ideas about the human body. This thesis is intended to help fill that gap, providing a much-needed contribution to women's history and the history of medicine.

### **Historiography**

Because this thesis will analyze the medical care of women as prescribed in obstetrics manuals, it necessarily blends together three different historiographies: those related to the histories of women, medicine, and print culture. All three of these fields are relatively new to the discipline of history, having been distinguished as historical subfields in the last fifty to sixty years.

Before the 1960s the history of women was still largely written in regards to their roles as wives and mothers, without much analysis of what the traditions and concepts on their path to marriage and motherhood meant for them and their place in society.<sup>26</sup> In early modern England, men wrote the vast majority of the published texts concerning women's bodies and lives. It was not until the 1960s and the "second wave" feminist movement that scholars began to focus sustained attention on family life in early modern Britain.<sup>27</sup> However, at this time many traditional historians continued to view the new women's history as a fad and deemed the subject matter "trivial, marginal, or 'too political.'"<sup>28</sup> According to Patricia Crawford, before the 1970s, "the 'real' historian saw no interest in the apparently timeless mutability of women's bodies, which bled, reproduced, and lactated."<sup>29</sup> It was only at that time that historians began to make women more visible, recover sources written about and by women, and write histories in which

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<sup>26</sup> Wiesner, 2.

<sup>27</sup> Angus McLaren, *Reproductive Rituals: The Perception of Fertility in England from the Sixteenth Century to the Nineteenth Century*, (London: Methuen, 1984), 1.

<sup>28</sup> Wiesner, 2.

<sup>29</sup> Patricia Crawford, *Blood, Bodies, and Families in Early Modern England*, (Oxon: Pearson Education Limited, 2004), 2.

women and their experiences were central.<sup>30</sup> These new histories demonstrated that every historical change in the world has affected women and their lives very differently from how these changes affected the lives of men.<sup>31</sup>

The 1970s continued to be a tumultuous period for the study of women with vastly different ideas coming out of that decade. On one side of these studies were Lawrence Stone and Edward Shorter, who argued that romantic love did not exist in Britain prior to the 1700s, and that men only considered marriage as a way to accumulate more property and money.<sup>32</sup> Around the same time as Shorter and Stone, David Hunt published his study on the psychology of family life in early modern France in which he stated, “I would conclude that the woman in the old regime executed no effective control over her own reproductive functions. She conceived, nurtured children, and conceived again ... according to the whim of her husband.”<sup>33</sup> By the 1980s this mindset began to change with the work of Michael MacDonald, who demonstrated that parents did feel love toward their unborn children, and grieved when a wife miscarried or a child was stillborn.<sup>34</sup>

Beginning in the 1990s, scholars generated another new subfield with the history of sexuality and its contribution to the history of the body and people’s experiences regarding their own bodies.<sup>35</sup> This led to new questions regarding physical experiences such as menstruation, pregnancy, and motherhood, and the way women gave meaning to these experiences.<sup>36</sup> One of the more recent additions to the field of women’s history is from Olivia Weisser, who concluded that women experienced pain and illness differently from men. Women, she argued, looked to

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<sup>30</sup> Crawford, 3.

<sup>31</sup> Wiesner, 3.

<sup>32</sup> McLaren, 9-10.

<sup>33</sup> McLaren, 1.

<sup>34</sup> McLaren, 10.

<sup>35</sup> Wiesner, 4.

<sup>36</sup> Wiesner, 6.

others around them as models of suffering and held that their own health could be impacted by their relationships or by positive or negative affective behaviors.<sup>37</sup>

The history of medicine has also undergone a radical transformation within the last forty years. While historians have written about the development of medicine for many years, these works often focused on the accomplishments of “great men” whose discoveries put medicine on an eternal path of progress. This began to change in the 1970s when historians turned their attention to those receiving treatment instead: the patients.<sup>38</sup> It was only during the 1980s that the history of medicine began to break into the histories of medicines with each path concentrating on a particular field of medicine such as obstetrics and gynecology. Traditionally historians studied the field of medicine with a specific focus on “learned” or “scientific” medicine. By the 1990s, however, the focus had shifted to that of “popular” medicine and folk tradition.<sup>39</sup> While there have been numerous studies about the history of medicine in regards to blood, surgery, or diseases still affecting the population today such as diabetes and cancer, there is only one book wholly devoted to the history of obstetrics in the time period of this thesis, though it does not cover the entire period of this thesis.<sup>40</sup>

The final historiographic thread traced by this thesis is that of medical manuals. Before the 1980s medical manuals were generally disregarded, as historians only pointed out the individual discoveries made in medicine without looking at the subtle changes made over longer periods of time. The study of medical manuals did not begin until the 1980s, after historians started to pay attention to the lives of patients and the larger aspects of the social history of

<sup>37</sup> Olivia Weisser, *Ill Composed: Sickness, Gender and Belief in Early Modern England*, (New Haven: Yale University Press, 2015), 3.

<sup>38</sup> Weisser, 8.

<sup>39</sup> Roy Porter, *The Popularization of Medicine: 1650-1850*, (New York: Routledge, 1992) 1.

<sup>40</sup> Audrey Eccles, *Obstetrics and Gynaecology in Tudor and Stuart England*, (London: Croom Helm, 1982).

medicine.<sup>41</sup> Roy Porter argued that it was common for gentry families to keep personal manuscript recipe books which would include medical advice alongside household and cooking tips.<sup>42</sup> Although Porter did not refer to midwifery manuals in his argument, it is not hard to imagine that gentry women would also own midwifery manuals as childbirth was a normal part of life. Unfortunately, despite the existence of published medical manuals from the early modern era, it is impossible to truly know who bought and read these manuals or how much the manuals were read as opposed to being a symbol of one's wealth or education.<sup>43</sup>

The early part of the 1990s brought the study of medical popularization, or how medical ideas spread to the general population, predominantly through the use of medical manuals such as those being used for this thesis. In 2001 Elaine Hobby, for instance, studied a midwifery manual written by Jane Sharp, and concluded that the language used in Sharpe's manual demonstrated the author's knowledge of the misogynistic understandings of the female reproductive body.<sup>44</sup> Another more recent development in the study of medical manuals was Jennifer Evans' 2014 book regarding the commonplace use of aphrodisiacs to treat fertility issues. Evans supported her conclusion through the analysis of many of the same medical manuals that will be used in this study.<sup>45</sup>

In the past forty years, three new fields or subfields of history have developed related to this thesis: the history of women, the history of medical manuals, and the breakdown of the history of medicine into more specific subjects such as obstetrics. However, despite the

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<sup>41</sup> Mary E. Fissell, "Popular Medical Writing" in *The Oxford History of Popular Print Culture, Vol. 1: Cheap Print in England and Ireland to 1660*, ed. Joad Raymond (Oxford, Oxford University Press, 2011) 418, though as mentioned above, Weisser puts the study of patients beginning in the 1970s.

<sup>42</sup> Porter, *The Popularization of Medicine*, 3.

<sup>43</sup> Porter, *The Popularization of Medicine*, 9.

<sup>44</sup> Elaine Hobby, "Secrets of the Female Sex': Jane Sharp, the Reproductive Female Body, and Early Modern Midwifery Manuals," *Women's Writing*, 8, no. 2 (2001) 209.

<sup>45</sup> Jennifer Evans, *Aphrodisiacs, Fertility, and Medicine in Early Modern England*, (New York: Royal Historical Society, 2014).

development of these new topics of study, the history of obstetrics in early modern England remains understudied. This thesis seeks to contribute to the burgeoning field of the history of obstetrics through close analysis of medical manuals relating to pregnancy and childbirth over multiple centuries.

### **Chapters**

This study contains three chapters, with each chapter focusing on a specific aspect of the reproductive process. Over the course of these chapters, the thesis will examine the progression of obstetrical knowledge from the year 1500 to 1770 through the use of twenty-nine medical texts available in England in the vernacular. These texts will be compared with others published around the same time and throughout the period to determine how the advice espoused changed along with the field of medicine as a whole and how new discoveries influenced the field of obstetrics. These comparisons will be used to determine what impact the Renaissance and Scientific Revolution had on medical practice and prescription regarding reproduction over three centuries. Texts originating in England will also be compared to texts from the Continent to determine how the ideas being promulgated in these various locations differed. The medical manuals written by women will be compared to manuals published around the same time by men to ascertain if there was a noticeable difference in the type of medical knowledge held by practicing midwives and male physicians.

Chapter 1 analyzes medical texts to determine how the practices and ideas deemed important for conception and the rectification of fertility issues changed as midwives, and later physicians, had access to more accurate depictions of the human body and how it worked.

Chapter 2 will focus on the topic of pregnancy and assess various issues including how pregnancy could be diagnosed, the practices prescribed to “influence” the baby’s gender, clues to

determine the baby's gender, what behaviors or practices were and were not "allowed," and any other practices regarding the care for pregnant women and their unborn child. Chapter 3 on childbirth will focus on the varying practices prescribed for use in childbirth for what were termed "natural" and "preternatural," or difficult, births. These will include the change in the use of female midwives to that of male physicians and will focus on the introduction and improvement of tools used in the birthing process such as forceps, thus leading to a decline in the number of mothers who died undelivered. This chapter also focuses on postpartum care and the concerns and treatment given to mothers after they had given birth. These included the prevention and treatment of mothers seeming to suffer from puerperal, or "childbed," fever and the advice given as to how long women should be allowed to rest and recuperate from giving birth before returning to household and marital duties.

As a whole, this thesis provides extensive analysis of the evolution of new ideas and methods in the field of early modern obstetrics. Using medical manuals as a case study, this thesis argues that changing medical and religious practices overlapped with the emergence of print culture to transform medical literature regarding aspects of the field of obstetrics such as conception, pregnancy, and childbirth. By tracing these changes from conception to the first few weeks after the birth of an infant, this thesis will provide a more in-depth picture of what an idealized version of conception, pregnancy, and childbirth looked like in early modern England through the Renaissance, Scientific Revolution, and eighteenth century.

### **A Note on Terminology**

Over the centuries the language and terminology used by physicians has changed as new discoveries were made about the human body and its processes, among several other reasons.



This was especially true during the early modern era as many aspects of the human body were revealed and given the names which are still used today. In cases where the early modern term differs from that of the present-day, the modern-day equivalent, if available, will be provided initially, but from that point on the historical terms will be used.

When discussing the development of the infant in the womb, pregnancy care, and miscarriages, the term “fetus” will be used to describe the infant. However, when discussing a woman’s preparations for labor, and the act of childbirth the terms “infant” or “child” will be used to indicate that at this point the fetus was considered viable as the child had quickened, or moved in the womb.

## **Chapter 1: Anatomy, Conception, and Barrenness**

### **Introduction**

In the early modern era one of the most crucial roles for a woman was to become a wife and mother, but while becoming a wife was relatively simple, becoming a mother was another matter. According to the medical manuals used, during the sixteenth, seventeenth, and eighteenth centuries, physicians, midwives, and other medical practitioners viewed conception as requiring specialized knowledge. It was crucial for the couple to know the best time to conceive, what conditions were needed, and, if conception failed to take place, how to remedy their barrenness. Early modern practitioners held vastly different ideas about the human body than modern physicians and because of this, their ideas regarding conception and barrenness are almost unrecognizable when compared with ideas held in the present.

Over the course of nearly three centuries understandings of conception changed dramatically. New anatomical models affected how physicians and laypeople regarded their own bodies and internal bodily processes including how conception occurred, the role of the man and woman in conception, and how a woman knew if she had conceived. For those who struggled to conceive, ideas regarding the treatment of barrenness also shifted, though not as much as other aspects discussed in this chapter. While the greater understanding of the human body affected the way physicians described conception, it did not change what physicians assumed to be the causes of barrenness. As the literate elite advocated rational thought over what they termed superstition during the early modern era, they no longer promoted the theory that barrenness could be caused by witchcraft or the use of animal organs to treat fertility problems.

This study focuses on the advancing ideas regarding fertility and conception brought about by the changing medical knowledge of the early modern era in such fields as anatomy and how the developing theories regarding the human body influenced how authors of the early modern era defined conception and treated a woman's failure to do so.

### **Anatomy**

The sixteenth and seventeenth centuries were characterized by evolving medical understandings of knowledge and ideas regarding the human body and conception. The most dramatic innovation came from the study of anatomy, which resulted in the shift from a one-sex model with few specific terms for female anatomy to the two sex model, with the emergence of anatomical terms to describe female organs. These developments affected the way physicians discussed conception and treated its antithesis, barrenness. For example, the discovery of spermatozoa in 1677 led physicians to analyze the male role in reproduction and how it could affect the couple's fertility.

At the beginning of sixteenth century, medical writing and knowledge still followed the teachings of Galen, a physician who had lived over a thousand years prior, but a revolution was soon to come over the world of medicine. The burgeoning practice of human dissections and reevaluations of medical texts, led physicians to make new discoveries that altered the way they viewed and treated the human body. In the late fifteenth and early sixteenth centuries the retranslation of the original Greek and Roman medical texts led to a reanalysis and reevaluation of currently held medical knowledge as many physicians claimed that the medieval translations in Arabic and Latin were corrupted and incorrect.<sup>46</sup>

<sup>46</sup> Andrew Wear, "Medicine in Early Modern Europe, 1500-1700," in *The Western Medical Tradition* (Cambridge: Cambridge University Press, 1995), 252-253.

While physicians had practiced dissections for over a thousand years, they had for the most part only used animals as it was considered desecration to cut up and destroy human remains. Galen made his discoveries made while dissecting humanoid animals such as apes were assumed to be the same in humans.<sup>47</sup> Even when human dissections became more common the body was dissected to prove the writings of Galen as one person would read from a Galenic text while another would dissect the body to show the part that was being read about.<sup>48</sup> In the fifteenth century, the interest in cutting open and examining the interior of the human body was initiated not in the world of medicine but in that of art. Artists, such as Michelangelo, Leonardo Da Vinci, and Battista Alberti, claimed that accurate representations of men and women in sculptures and paintings required knowledge of the human body. Artistic interest in anatomical dissections brought the subject to the public which helped it to gain popularity on the European Continent, though there were still those who disapproved for religious reasons.<sup>49</sup> In England, dissections were so few in number that the vast majority of manuals published prior to the middle of the seventeenth century were translations of texts which had originally been written in other parts of Europe such as Italy and France.<sup>50</sup> In the mid-sixteenth century continental European anatomists tried to change the prevailing idea that dissection was disgraceful. Some referred to the dignity of the body, while others claimed that it was their duty as Christians to perform dissections so that they could understand God's creation.<sup>51</sup> Continental anatomists succeeded in raising the status of anatomy in Europe, though it took longer for people to accept the art of dissection in England, because its distance from Italy, the birthplace of the

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<sup>47</sup> Wear, 264-265.

<sup>48</sup> Vivian Nutton, "Medicine in Medieval Western Europe, 1000-1500" in *The Western Medical Tradition* (Cambridge: Cambridge University Press, 1995), 178.

<sup>49</sup> Wear, 264-265.

<sup>50</sup> Jennifer Evans, *Aphrodisiacs, Fertility and Medicine in Early Modern England* (New York: Royal Historical Society, 2014), 31.

<sup>51</sup> Wear, 287-289.

Renaissance, resulted in a delay of practices and information. Even with the stigma against dissections, anatomists were able to obtain specimens and make new discoveries which would soon change the world of medicine.<sup>52</sup>

Eventually, while physicians performed dissections whether on the Continent or in England, many anatomists saw things which contradicted the writings of Galen, the basis of their medical education. These contradictions prompted Andreas Vesalius, a sixteenth century Belgian anatomist who studied at universities in both Louvain and Paris, to publish his *De Humani Corporis Fabrica*. Not only was this work the first thorough account of human anatomy, it set the precedent for anatomists to go back and correct the works of previous authors, including the Ancients such as Galen, Aristotle, and Hippocrates. Vesalius' corrections stemmed from personal observation and were generated empirically, a practice that permanently altered how valid scientific and medical discoveries were made.<sup>53</sup> The importance of personal observation and empiricism was espoused in Nicolas Culpeper's *A Directory for Midwives*, in which he stated that as, "an Eye-witness in al[l] I have written, my opinion is, that he is not very wise that altogether neglects Authors [the Ancients], but he is a Fool in grain that beleeves them before his own eyes."<sup>54</sup> Culpeper, a seventeenth-century physician and astrologer who was best remembered for writing and translating books in order to enable the poor to heal themselves,<sup>55</sup> also pointed out specifically that Aristotle and the Muslim physician Avicenna were wrong to argue that the sense of touch lay in the flesh or the fat instead of in the nerves.<sup>56</sup> It was not until more physicians became comfortable with the idea of contradicting those who came before them

<sup>52</sup> Audrey Eccles, *Obstetrics and Gynaecology in Tudor and Stuart England* (London: Croom and Helm, 1982), 24-25.

<sup>53</sup> Wear, 275-277, 280.

<sup>54</sup> Nicolas Culpeper, *A Directory for Midwives* (London: 1651), 5.

<sup>55</sup> *Oxford Dictionary of National Biography*, s.v. "Culpeper, Nicholas," <https://doi-org.proxy.library.vcu.edu/10.1093/ref:odnb/6882> (accessed October 12, 2018).

<sup>56</sup> Culpeper, 1651, 19.

that physicians began to truly investigate the human form, rather than solely trusting the writings and practices of Galen.

Other changes of this era included how physicians viewed male and female bodies, the discovery of new organs, and the changing perceptions of previously known organs. According to Thomas Laqueur, at the beginning of the sixteenth century the predominant theory regarding the human body was what was termed the “one-sex” model. According to this model male and female were linked by common reproductive anatomies. Instead of being depicted as two ends of a spectrum, the female form was seen as a less perfect form of the male body.<sup>57</sup> Those who held Galenic beliefs and early modern physicians wrote that a man’s body contained more heat, which physicians believed to be the determinant of gender. This meant the man’s reproductive organs were located outside of his body while a woman, who was naturally colder, had her organs inside her body. Many of the medical manuals from this period stated that a woman’s reproductive organs had to be contained inside the body in order for the organs to have enough heat for conception and pregnancy.<sup>58</sup> In short, the female reproductive organs were seen as identical to that of men, just turned inside out, though it was believed that if a woman produced too much heat, her organs might fall outside of her body and thus change her gender. Laqueur noted that various medical manuals described a young woman whose high amount of exercise and work produced precisely this result.<sup>59</sup> The idea that a woman could change into a man, and a man into a woman by a lack of heat, supposedly demonstrated the idea that gendered bodies were interchangeable, with the only real difference between them being their intrinsic heat.

<sup>57</sup> Thomas Laqueur, *Making Sex: Body and Gender from the Greeks to Freud* (Cambridge: Harvard University Press, 1990), 26.

<sup>58</sup> Laqueur, *Making Sex*, 29.

<sup>59</sup> Laqueur, *Making Sex*, 127.

In the one-sex body paradigm, this interchangeability was demonstrated through the idea that the male testicles were held to be the same as the ovaries, the scrotum the same as the womb, the penis the same as the vagina, and the blood vessels around these organs the same in both men and women. This similarity was evident in the terms used to describe many, though not all, of these parts. “Testicles” or “stones” were used to refer to ovaries and testicles and the vessels around the reproductive organs were given names such as “spermatic vessels,” “carrying vessels,” and “preparing vessels” in both men and women. It was not until the one-sex theory began to fall out of favor in the eighteenth and nineteenth centuries that the use of the same names in both men and women changed to the more commonly known terms which are still used today.

Although many historians have accepted Laqueur’s theory regarding the one-sex model, one historian challenged his analysis. Jennifer Evans argued that Laqueur’s analysis of the one-sex model was too simplistic and instead claimed that the one-sex model was discussed and accepted at the same time as the two-sex model, the model which eventually replaced it in the eighteenth and nineteenth centuries.<sup>60</sup> If Evans is correct, there may have been more than one than one way to view and understand the workings of human body in the early modern era.

As anatomists began dissecting human bodies new organs were found which challenged the one-sex model. The “discovery” of the clitoris in the middle of the sixteenth century was the first to challenge the idea of the one-sex body. While the existence of the clitoris had been known to the Ancients as part of female anatomy, this information had been lost to the rest of Europe during the medieval period. The reintroduction of ancient texts led to the “rediscovery”

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<sup>60</sup> Evans, *Aphrodisiacs*, 52.

of the clitoris by early modern physicians.<sup>61</sup> Even after “finding” the clitoris, physicians were unsure of its role, with some, such as the Arabic physician Avicenna, believing it was a part of the labia minora, or the French anatomist Charles Estienne, who believed its purpose related to urination. The first physician who published the connection between the clitoris, pleasure, and conception was Realdo Columbo in 1559.<sup>62</sup>

The identification of the clitoris was detrimental to the idea of the one-sex body because many authors referred to the clitoris as a female penis, even though the one-sex body model stated that it was the vagina which was the female version of the penis.<sup>63</sup> If both the clitoris and the vagina were deemed the female counterparts of the penis, then this would mean that women had an additional male organ, making them hermaphrodites.<sup>64</sup> Even though this revelation contradicted the one-sex model, authors such as Jane Sharp saw no problem with stating that both the vagina and clitoris were equivalents to the male penis.<sup>65</sup> Even with the introduction of contradictory evidence such as this, many physicians and midwives hesitated to discard the received knowledge.

A medical manual published in 1665 by Peter Chamberlen, a physician who tried unsuccessfully to create a midwives college in the 1630s,<sup>66</sup> demonstrated the beginning of the movement away from the idea of the one-sex body. Prior manuals, such as Christof Wirsung’s 1598 manual, *The General Practice of Physick*, stated that the female reproductive organs were much like those of a man, and provided a discussion of Galenic principles regarding gender and

<sup>61</sup> Katherine Park, “The Rediscovery of the Clitoris,” in *The Body in Parts: Fantasies of Corporeality in Early Modern Europe*, ed. David Hillman and Carla Mazzio (New York: Routledge, 1997), 173.

<sup>62</sup> Park, 176-177.

<sup>63</sup> Laqueur, *Making Sex*, 65.

<sup>64</sup> Park, *Body in Parts*, 178.

<sup>65</sup> Jane Sharp, *The Midwives Book* (London: 1671), 40-42.

<sup>66</sup> Although there were three men by the name of Peter in the Chamberlen family and the manual itself did not discern which one it was written by, it is likely the Peter who tried to start a midwife college was the author of this manual as he was alive the year it was published.



heat like that provided above.<sup>67</sup> Chamberlen agreed with Wirsung, an early sixteenth-century German-born but Italian trained pharmacist, in the beginning of his manual, though he later stipulated that male and female anatomy differed in some respects.<sup>68</sup> Chamberlen included a section which described how the male and female reproductive organs differed. “Neither is their such a similitude between the bottome of the Womb inverted, and the Cod [scrotum] of the man,” he wrote; “likewise the insertion of the spermatical vessels, the different figure of the mans and womens Stones, their magnitude, substance, and structure, or composition do strongly oppose this opinion.”<sup>69</sup> Chamberlen argued that based on the anatomical evidence, it would be impossible for a woman to change into a man. Jane Sharp, a self-proclaimed midwife of thirty years, continued this thought process in her 1671 manual when she stated that while the female organs of generation are similar to a man’s, they were not interchangeable.<sup>70</sup>

Theories regarding how the seed required for conception was created took longer to change because of the slower development of optics. At the beginning of the early modern period physicians believed that the blood in both men and women was converted into seed. The process started in what were called the preparing vessels, which attracted and elaborated the blood. It was then taken to the stones where it was converted to seed before being released during sexual intercourse.<sup>71</sup> After William Harvey discovered the circulation of blood in 1628, the manuals continued to follow the previously described process regarding the formation of the seed until the

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<sup>67</sup> Christof Wirsung, *The General Practice of Physick* (London: 1598), 288.

<sup>68</sup> Peter Chamberlen, *Dr. Chamberlain’s Midwives Practice* (London: 1665), 24.

<sup>69</sup> Chamberlen, 56.

<sup>70</sup> Sharp, 82. While the majority of historians agree with the information Sharp provided about herself in her manual, Katherine Phelps Walsh hypothesized that the lack of information available to corroborate with Sharp’s biography was in fact because “Jane Sharp” was a male author who used a female pseudonym as a way to appeal to female readers. Katherine Phelps Walsh, “Marketing Midwives in Seventeenth-Century London: A Re-examination of Jane Sharp’s *The Midwives Book*,” *Gender and History* 26, no. 2 (2014): 225.

<sup>71</sup> Thomas Chamberlayne, *The Compleat Midwives Practice* (London: 1656), 3.

French manual *A General Treatise of Midwifery* written by Pierre Dionis, a French surgeon assigned to the Royal Garden for surgical demonstrations by Louis XIV, was translated and published in English in 1719. In this manual Dionis revealed through empirical evidence that veins did not carry blood to the testicles in order to produce seed. After this Dionis then described how the male seed is actually formed, “The Blood brought from the *Aorta* by the Spermatick Artery into the Testicle, runs through its Substance . . . which yet suffer the seminal Particles . . . to pass.”<sup>72</sup>

The new discovery of blood circulation in the reproductive organs also shaped the development of ideas about how a fetus became male or female. Manuals written prior to Dionis’, such as that written by the Bristol physician William Sermon in 1671, expounded the Galenic belief that because the right side of the body was determined to be hotter, male children came from seed which had been formed in the right testicle.<sup>73</sup> Because of Dionis’ knowledge of the circulatory system, he rejected Galen’s theory regarding how gender was determined and instead stated the testicle which the seed came from did not determine if the child would be a boy or a girl.<sup>74</sup> One possible reason that it took so long for this knowledge to spread to other aspects of medicine is that although Harvey published his writings on the circulation of blood, *Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus*, in 1628, an English translation of the work did not appear until twenty years later. Practitioners who lacked an advanced knowledge of Latin would not have been able to read his work when it was initially published. The only other explanation as to why Galenic ideas regarding the blood’s role in reproduction lasted so long is simply the authors’ refusal to turn away from the knowledge of the

<sup>72</sup> Pierre Dionis, *A General Treatise of Midwifery* (London: 1719), 51.

<sup>73</sup> William Sermon, *The Ladies Companion* (London: 1671), 183.

<sup>74</sup> Dionis, 9.

ancient authors. While some changes took longer to appear in child-birthing manuals, other developments influenced medical texts more rapidly.

The lack of specific female anatomical terms occurred throughout the earlier medical manuals as the ovaries were called “stones” or “testicles” up until the first appearance of the term “ovarium” in John Shirley’s *A Short Compendium of Chirurgery* in 1678. “There are almost the same *Spermatick* parts in women . . . Yet *De Graaff* proveth that their *Testicles* are as an *Ovarium*, containing perfect *Eggs*. Thus new Wonders are daily found in the *Microscosm*.”<sup>75</sup> In this statement, Shirley was referring to the work of Renier De Graaf who had first described and labelled the ovaries and its follicles in his 1672 work entitled *De Mullerium Organis*, though it was slightly incorrect.<sup>76</sup> Prior to this date the only terms used to describe the ovaries were “testicles” and “stones” as mentioned above, though Raynalde stated that the female stones were different in form, substance, temperature, and figure.<sup>77</sup> After Shirley’s manual in 1678, three out of the twelve manuals published refer to the ovaries as either “ovaries” or “ovaria,”<sup>78</sup> and two others use the term “ova” or “eggs,” instead of the previously used “seed.”<sup>79</sup> Even though authors were using the term “eggs” at this early date, the actual egg would not be discovered until 1827.<sup>80</sup>

<sup>75</sup> John Shirley, *A Short Compendium of Chirurgery* (London: 1678), 98-99. As is a common problem for historians of the early modern era, there are several John Shirleys who published books in late seventeenth-century England, and not much is known about any of them besides what they published.

<sup>76</sup> In De Graaf’s initial theory he believed the ovarian follicle itself was the egg, which would detach from the ovary and enter the Fallopian tube. It was later realized he had observed, but not recognized an actual ova in the Fallopian tube. Michael J. O’Dowd and Elliot E. Philipp, *The History of Obstetrics and Gynaecology* (New York: The Parthenon Publishing Group, 1994), 350-351.

<sup>77</sup> Thomas Raynalde, *The Byrth of Mankynde* (London: 1545), 39. Other authors throughout the study said the same thing and added other categories such as size, temperament, covering, and location.

<sup>78</sup> Charles Gabriel Le Clerc, *The Compleat Surgeon* (London: 1701), 82; Anonymous, *Aristotle’s Master-piece Completed in Two Parts* (London: 1702), 9; Dionis, 29.

<sup>79</sup> Anonymous, *Aristotle’s Compleat Master-piece; in Three Parts* (London: 1715?), 13; Anonymous, *Aristotle’s Last Legacy* (London: 1749), 17.

<sup>80</sup> Angus McLaren, *Reproductive Rituals: The Perception of Fertility in England from the Sixteenth Century to the Nineteenth Century* (Methuen: London, 1984), 23.

Another change in the anatomical terms concerned what are today called the Fallopian tubes. In the early manuals there were not any descriptions or pictorial depictions which would readily lead the modern reader to believe the authors were talking about the Fallopian tubes. Although Gabriele Falloppio, an Italian physician who studied at the University of Ferrera, discovered the Fallopian tubes in 1561, the first mention of them as such did not occur until over a century later in William Sermon's *The Ladies Companion*, written in 1671.<sup>81</sup> Unlike in the case of the ovaries, the phrase "Fallopian tubes" did not seem to catch on quickly as only two other medical manuals in this study used the term afterwards and no manual depicts them.<sup>82</sup>

Although there does not seem to be a specific date or person responsible for the first use of the word "vagina" to describe the neck of the womb, in the manuals surveyed the first appearance of the term took place in Francois Mauriceau's 1672 manual *The Diseases of Women with Child*, originally published in France. After this first appearance in Mauriceau's work, the term appears another four times before 1770.<sup>83</sup> Mauriceau, a Parisian master-surgeon of the seventeenth century, is known today for helping to establish obstetrics as a distinct specialty in the field of medicine.

While many parts of the female reproductive anatomy gained new terminology during the early modern era, there was at least one part of the female body which did not receive the name commonly used today, and that is the cervix. All of the manuals which addressed female anatomy, as one quarter of the manuals did not, referred to what is today known as the cervix as the "mouth of the womb," or "mouth of the matrix." Although the cervix did not receive its

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<sup>81</sup> Sermon, 206.

<sup>82</sup> Robert Barret, *A Companion for Midwives, Childbearing Women, and Nurses* (London: 1699), 47; Anonymous, *The New Aristotle's Masterpiece* (London: 1750), 20.

<sup>83</sup> Francois Mauriceau, *The Diseases of Women with Child* (London: 1672) 7; Barret, 61; Le Clerc, 83; Hendrik van Deventer, *The Art of Midwifery Improv'd* (London: 1716) 30; Anonymous, *The New Aristotle's Masterpiece*, 17.

current name during this period, there was an addition to later manuals which indicated the arrival of new knowledge concerning the cervix in the late sixteenth or early seventeenth century. Two authors, William Sermon and the anonymous author of *Aristotele's Masterpiece, or, The Secrets of Generation*, included in their description of the cervix what appeared to be the first mention of the mucus plug which covered the cervix in pregnancy and fell out shortly before labor started.<sup>84</sup>

One final change demonstrated in the manuals in regards to human anatomy was the addition of a chapter on the pelvic bones of a woman. In the entirety of the sixteenth and seventeenth centuries those authors who mentioned the pelvis and pelvic bones did so only as a way to help the reader know where the reproductive organs were located. It was not until the early part of the eighteenth century that physicians began to take note of the differences between male and female skeletons. Of the manuals printed in the eighteenth century prior to 1770, only two manuals described these differences and provided an in-depth description of the pelvic bones themselves, Hendrik van Deventer's 1716 manual *The Art of Midwifery Improv'd*, and John Astruc's 1767 manual *The Art of Midwifery Reduced to Principles*.<sup>85</sup> Both of these authors believed it was necessary for those assisting women in labor to know the position, figure, articulation, bigness, and curvitude of the pelvic bones as the infant being delivered must first pass through them.<sup>86</sup> What is particularly interesting about these manuals, though, is that the pelvic bones were the only parts of the anatomy which these physicians discussed, as opposed to earlier authors who focused only on the organs directly related to reproduction.<sup>87</sup>

<sup>84</sup> Sermon, 201; Anonymous, *Aristoteles Master-piece, or, The Secrets of Generation*, 111.

<sup>85</sup> Van Deventer, 19; John Astruc, *The Art of Midwifery Reduced to Principles* (London:1767), 6.

<sup>86</sup> Van Deventer, 18, Astruc, 2.

<sup>87</sup> The manuals which focused only on the pelvic bones were those which focused solely on labor and delivery as opposed to other manuals which discussed the entire reproductive process.

While the manuals demonstrated changes to human anatomy across the early modern era, there was one change that occurred briefly before Thomas Raynalde, an early sixteenth-century physician, published his *Birth of Mankind*, a translation of the German Eucharius Rosslin's *Der Swangern Frauen und Hebammen Rosegarten*, in 1545. This change concerned the most important part a woman's body needed for conception: the womb. While Galen and previous physicians believed the human womb to contain seven separate cells based on their dissections of animals, the sixteenth century anatomist, Jacobus Berengarius of Capri discovered this to be false in 1522, thus leading to a confirmation that the womb only contained one cell.<sup>88</sup> Because this discovery took place in the 1520s, it was not unusual that this information was presented in the earliest manual published, the 1545 edition of *The Birth of Mankind*.<sup>89</sup> Based on the fact that medical authors throughout the early modern era, at least until Pierre Dionis' manual published in 1719,<sup>90</sup> were still correcting this mistake demonstrated that many people still relied on the knowledge presented by ancient authors. Because medical beliefs had been held for thousands of years and were rooted in their Greco-Roman understanding of anatomy and medicine, many physicians struggled to replace long-held classical beliefs, even when anatomical dissections proved them invalid.<sup>91</sup>

When the anatomists of the late fifteenth and early sixteenth century began questioning the works of ancient authors such as Galen, their work and continual discoveries changed the way the human body was viewed and understood, especially the organs of generation of women for the next three hundred years. These advances in anatomy and physiology changed the way people viewed the process of conception and what were considered to be the requirements for a

<sup>88</sup> Culpeper, 1651, 33; O'Dowd and Philipp, 60.

<sup>89</sup> Raynalde, 35.

<sup>90</sup> Dionis, 47.

<sup>91</sup> Laqueur, *Making Sex*, 69.

successful conception to take place. Because of this, physicians were better able to understand how the process of conception happened and what could disrupt that process and lead to barrenness.

### **Conception**

In order to understand how people of the early modern era comprehended, encouraged, and achieved the act of conception, it is necessary to understand how they defined conception. According to Francois Mauriceau in his 1672 manual entitled *The Diseases of Women with Child*, “Conception is nothing else, but an action of the Womb, by which the prolifick seeds of the Man and Woman are there received and retained, that an infant may be engendered and formed out of it.”<sup>92</sup> While physicians stated there were numerous requirements for conception to occur, the most important requirement mentioned by three of the authors was the blessing of God as it was He who furthered or hindered conception.<sup>93</sup> Jennifer Evans argued one explanation for why other authors did not mention this, even though the English people of the sixteenth, seventeenth, and eighteenth centuries practiced either a form of Roman Catholicism or Protestantism, was that those authors believed that bringing God into the world of medicine marginalized their role in healing and care.<sup>94</sup>

Both prior to and throughout the early modern period, physicians and philosophers had one central question regarding conception: What role did women play in the act of conception? While physicians commonly held that women nourished the fetus once conception took place, they wanted to understand whether or not a woman contributed any substance to conception

<sup>92</sup> Mauriceau, 12.

<sup>93</sup> Sharp, 97; Anonymous, *Aristoteles Master-piece, or, The Secrets of Generation*, 10; Anonymous, *Aristotle's Master-piece Completed in Two Parts*, 5-6.

<sup>94</sup> Evans, *Aphrodisiacs*, 68.

beyond just a place for the fetus to grow until ready to be born. Prior to 1651, there were two predominant theories in this matter, both of which had been created by Aristotle and Galen over a thousand years prior. The Aristotelians held that women did not produce seed or anything comparable and that their only contribution to the process was their menstrual blood which produced matter from which the fetus was formed. On the opposite side of the argument were the Galenists, who believed women produced semen which contributed to the form of the fetus, though the father still played the most important role in the process.<sup>95</sup> This argument between the Galenists and the Aristotelians was to continue into the eighteenth century until the ovum theory came to be widely accepted in the late seventeenth century.

During the early modern era another shift occurred regarding the role of women in conception. In the middle of the seventeenth century William Harvey, who pioneered the discovery of the circulation of the blood, stated in his *Exercitationes de Generatione Animalium*, “ex ovo omnia,” or “all from an egg.” Harvey postulated that all animal life emerged from eggs in a mother’s body, helping to give rise to ovism, or the ovum theory--that a fetus derived solely from its mother as there was no actual contact between the egg and sperm. In ovism the sperm merely provided the spirit and form for the fetus in a manner similar to that espoused by Aristotelians in the past.<sup>96</sup>

A prevalent part of the one-sex theory was the notion that in order for a woman to conceive, she must have an orgasm. The reason for this being that a man required an orgasm to release his seed, and if men and women were anatomically identical, then a woman must also experience an orgasm in order to release her seed. Because women received pleasure from

<sup>95</sup> Merry E. Wiesner, *Women and Gender in Early Modern Europe*, 2<sup>nd</sup> ed., (Cambridge: Cambridge University Press, 2000), 30-31.

<sup>96</sup> Carolyn D. Williams, “‘Difficulties, At Present in No Degree Clear’d Up’: The Controversial Mother, 1600-1800,” in *The Female Body in Medicine and Literature* ed. Andrew Mangham and Greta Depledge (Liverpool: Liverpool University Press, 2011), 17.



clitoral stimulation, physicians connected the two ideas and stated that the motion and attrition of the clitoris sent signals to the stones through the spermatic vessels, which caused the seed to be released.<sup>97</sup> This assumption was not just voiced by male authors. Female authors tended to put forward similar claims about female bodies, especially regarding the role of pleasure in conception.<sup>98</sup> This homogeneity in knowledge demonstrated that the one-sex model was pervasive and widely accepted by both the men and women who studied the human body.

Merry Wiesner has argued that because of the perceived necessity of pleasure for conception, many manuals spent time on ways to heighten female sexual pleasure.<sup>99</sup> This did not appear to be the case in the manuals used in this research, with authors merely stating the need for the proper arousal of both partners as well as the quality of the love making in the spirit, mind, and body.<sup>100</sup> As Wiesner did not provide any notes for her claim regarding sexual advice, it cannot be determined if this idea was present in manuals printed in England, or in those only printed on the continent.

While a large portion of early modern physicians argued that orgasm was necessary for conception, a minority did not. According to Laqueur, this disagreement regarding the role of pleasure in conception was not new and had taken place for centuries. In the manuals used in this study, however, only two manuals seemed to cast doubt on this belief. The first of these was William Sermon's 1671 manual, which, unlike almost every other manual, did not directly connect the clitoris with pleasure and conception. Instead, it stated only that the clitoris helped to produce pleasure in the sexual act.<sup>101</sup> The omission of this connection, when so many other

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<sup>97</sup> Chamberlen, 51.

<sup>98</sup> Laqueur, *Making Sex*, 67-68.

<sup>99</sup> Wiesner, 57.

<sup>100</sup> Anthony Fletcher, *Gender, Sex, and Subordination in England 1500-1800* (New Haven: Yale University Press, 1995), 54-55.

<sup>101</sup> Sermon, 194-195.

manuals included it, suggests that Sermon may not have drawn a direct connection between pleasure and conception, or that he understood this connection to be known by readers.

The anonymous author of the hugely popular text, *Aristotle's Compleat and Experienc'd Midwife*, also expressed doubt concerning the centrality of pleasure to conception. This author seemed to question the idea that it was an orgasm which caused a woman to release seed, rather than the more direct idea that conception could not happen without pleasure. He (or she) argued this by stating:

But not withstanding what is here urg'd by our modern Anatomists, there are some late Writers of the Opinion of the Ancients, viz. That Women both have, and emit Seed in the Act of Copulation... and [women] positively affirm they are sensible of the Emission of the their Seed in those Engagement; and that it is therein that a great part of the Delight which they take in that Act consists: I will not therefore go about to take any of their Happiness away from them, but leave them in the possession of their imagin'd Felicity.<sup>102</sup>

While the author of *Aristotle's Compleat and Experienc'd Midwife* did not directly discredit the idea that women released seed, he provided both the beliefs of Aristotle, Galen, and of the modern anatomists. Although he stated that he doubted whether women had seed to release, he did not see the harm in allowing those who did believe in female seed to continue to do so as it gave them pleasure during the act of intercourse.

Alongside these authors were those, such as Pierre Dionis and the anonymous author of *The New Aristotle's Masterpiece*, who acknowledged that the clitoris helped to cause pleasure during the sexual act, though they did not state that pleasure was necessary for conception.<sup>103</sup> Considering the number of authors who failed to draw an explicit connection between pleasure and conception, it could be suggested that this idea was falling further out of favor. Angus McClaren and Thomas Laqueur both argued that the eighteenth century brought about the

<sup>102</sup> Anonymous, *Aristotle's Compleat and Experienc'd Midwife*, 22.

<sup>103</sup> Dionis, 42; Anonymous, *The New Aristotle's Masterpiece*, 14.

separation between pleasure and conception. However, McClaren stated that this change happened in the beginning of the eighteenth century,<sup>104</sup> which the evidence seems to support, while Laqueur claimed that this happened in the latter part of the century.<sup>105</sup>

While it is known today that one cannot naturally influence the sex of their unborn child, two manuals published in the early modern era stated that this was possible during the time of conception. This determination was based on the Galenic philosophy that the right side of the body was warmer and thus was more likely to produce a male child. According to the authors of *Aristotele's Master-piece or The Secrets of Generation*, published in 1684, and *Aristotle's Master-piece*, published in 1702, in order to conceive a male child, the woman should lay on her right side after intercourse in order that the seed may fall to the right side of the womb. To conceive a female child, the author instructed that the woman should lay on her left side so that the seed may fall to the left side of the womb.<sup>106</sup> Authors also advised couples to have intercourse on specific days after menstruation had ended in order to influence the sex of their fetus. The period of time immediately following the end of menstruation was believed to be the best time for conception, because the womb would be dry, allowing it to retain the seed.<sup>107</sup> These two unknown authors, whose manuals had a combined nine editions throughout the seventeenth and eighteenth centuries, theorized that having intercourse everyday between the first and fifth days or between the eighth and twelfth days after the woman's menses had ended would result in

<sup>104</sup> Angus McClaren, *Reproductive Rituals: The Perception of Fertility in England from the Sixteenth Century to the Nineteenth Century* (London: Methuen, 1984), 14-15.

<sup>105</sup> Thomas Laqueur, "Orgasm, Generation, and the Politics of Reproductive Biology" *Representations* 14 (1986) in Evans, *Aphrodisiacs*, 74.

<sup>106</sup> Anonymous, *Aristoteles Master-piece, or, The Secrets of Generation*, 13; Anonymous, *Aristotle's Master-piece*, 8. Although both these manuals referred to Aristotle in their titles, the manuals differed to such an extent that they were likely not written by the same person, nor was the 1702 manual a later edition of the 1684 manual. Whoever authored these manuals likely chose to use a form of the name "Aristotle" in their titles as their relation to the popularity of ancient wisdom would likely entice potential customers to buy them.

<sup>107</sup> Sermon, 15.

a boy as the womb was believed to be warmer or had more blood supply on the right side, and thus, conducive to the production of a male child. Intercourse in the time between the fifth and eighth days would supposedly result in a female child as more blood was on the left side of the womb.<sup>108</sup> It is curious that this information only appeared in these two manuals and not in other authors' discussions of how to influence the sex of an unborn child. For example, Jane Sharp stated that it was the temperature of the seed which determined the gender of the child. This followed the same Galenic and Hippocratic principle whereby hotter seed would lead to a male child, whereas colder seed would result in a female child.<sup>109</sup> However, Evans discovered that this model was not advocated by many authors other than Sharp and a few others.<sup>110</sup>

Advancements in the field of anatomy transformed physicians' theories regarding what happened during conception. In the seventeenth century physicians argued that once the seed had been released the womb would greedily snatch it up because the womb desired to conceive.<sup>111</sup> Once the womb had taken in the seed, the outer parts of the womb would move toward the center and embrace the seed in order to begin mixing it.<sup>112</sup> This drawing together provided enough heat for the seeds to properly mix and for the seed to implant itself and result in a pregnancy.

The discovery of spermatozoa in 1677 by Antonie van Leeuwenhoek changed this belief as physicians now knew that the seed had the ability to move and enter the womb on its own. The womb no longer had to actively draw in the seed. However, when women's role in conception changed from producing seed to producing an egg, there was not a demonstrable difference in how the seed was released versus that of the egg being released. The discovery of

<sup>108</sup> Anonymous, *Aristoteles Master-piece, or, The Secrets of Generation*, 14-15; Anonymous, *Aristotle's Master-piece*, 8.

<sup>109</sup> Sharp, 40-41.

<sup>110</sup> Evans, *Aphrodisiacs*, 59.

<sup>111</sup> Culpeper, 1662, 132.

<sup>112</sup> Sharp, 34-35, 63.

sperm did lead to a reassertion that man had the prominent place in conception as the movement of the sperm demonstrated life, while the egg was viewed as lifeless.<sup>113</sup> The pendulum regarding the most important contributor to conception had once again swung back in the direction of men.

Along with who had the dominant role in conception, another mystery of conception that physicians attempted to explain during the early modern era was why women sometimes conceived only one child, but on other occasions conceived multiple children. There were several theories regarding what caused multiple births, most of which were derived from the ancient beliefs. The majority of these theories stated that if a woman gave birth to more than one child at a time, it was because both children had been conceived at the same time. However, the authors provided multiple reasons as to why this occurred.

One of the beliefs which had been held the longest was Ptolemy's theory that multiple births were influenced by the position of the stars at the time of conception, as was restated in Jane Sharp's 1671 manual.<sup>114</sup> However, Sharp was the only author to mention this, leading one to the conclusion that few early modern authors still believed the stars to have an influence over conception specifically. Another theory purported by the Ancients and restated by early modern authors regarding multiple conceptions was that it resulted from an excess amount of seed.<sup>115</sup> Sharp attributed this knowledge to Empedocles, an ancient Greek philosopher who was best known for his explanation of the universe through the four elements of water, earth, fire, and air. The anonymous author of *The English Midwife* followed this same logic but attributed the excess of seed to both the man and woman, instead of solely to the woman.<sup>116</sup>

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<sup>113</sup> Evans, *Aphrodisiacs*, 61.

<sup>114</sup> Sharp, 70.

<sup>115</sup> Sharp, 70.

<sup>116</sup> Anonymous, *The English Midwife* (London: 1682), 197.

After the medical world changed from the theory of women producing seed to producing eggs, even if the eggs had not actually been observed at this point, there was a change in the theory regarding why some women gave birth to multiple babies. Pierre Dionis stated that the conception of multiple children occurred from more than one egg being released as a result of the woman receiving more pleasure than usual during intercourse.<sup>117</sup> This was for the most part the same idea as the theory regarding an excess amount of seed which was then adapted to fit in with the new ideas regarding a woman's role in reproduction. Instead of the woman releasing an excessive amount of seed during intercourse, it was now believed that she released more than one egg during this time.

While shifting ideas regarding the conception of more than one child purported the conception to take place at the same time, another popular theory was superfetation, or the belief that a woman could conceive when she was already pregnant. Jane Sharp provided in her manual an argument for this theory of superfetation using the Bible, "But to end this dispute we read *Gen[esis]. 4.2. That Eve conceived again and bare his brother Abel;* the Original signifies, she conceived upon conception, *and bare his brother Abel.*"<sup>118</sup> Modern day readers may take this verse to mean that Eve bore Cain, her first son, and then later conceived again and had a second son. Sharp, however, read this to mean that Eve, while already pregnant, conceived again, meaning that Cain and Abel were delivered at the same time even though they were the product of separate conceptions from two different acts of coitus.

Although the ancient authors and modernists, such as Nicolas Culpeper, held that the mouth of the womb shut itself so tight, "*that you cannot put in a Needles point,* yet a woman with child may take such pleasure after, that she may a little open the womb to receive seed

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<sup>117</sup> Dionis, 30.

<sup>118</sup> Sharp, 72.

again, and draw it in, which may form another child.”<sup>119</sup> It is because of this that Culpeper stated that once a woman has discovered herself to be pregnant, she must abstain from intercourse to prevent superfetation from occurring.<sup>120</sup>

As the seventeenth century continued, however, other physicians began to doubt and criticize this theory. The anonymous author of *The English Midwife* argued that once the mouth of the womb closed from the conception of a child, it would be impossible for it to open up again until the time of birth. Having said that, the author then stated that it might be possible for the mouth of the womb to open up just enough during intercourse to “let pass some slimy excrements,” referring to a small amount of the man’s seed, which could result in superfetation.<sup>121</sup> This author’s view was different from those proposed by others in that s/he sought to determine the exact timeframe when this might be possible. The author stated that if the subsequent conception were to occur less than six days after the initial conception, it would confuse the first seed which was not yet fully protected and result in a miscarriage. On the other side of the argument, the author stated that if the subsequent conception occurred too late, such as thirty or forty days after the first conception, then the first fetus would be too large to allow a second one to develop as both children must be born at the same time.<sup>122</sup>

Following this discussion, the author then provided a guide to tell whether the multiple babies born had been conceived at the same time or were a result of superfetation. If the babies born were about the same size and with only one afterbirth delivered, as is the case with identical twins, then they had been conceived at the same time. Contrarily, if one baby was smaller than

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<sup>119</sup> Culpeper, 1662, 144.

<sup>120</sup> Culpeper, 1662, 144.

<sup>121</sup> Anonymous, *The English Midwife*, 195.

<sup>122</sup> Anonymous, *The English Midwife*, 197-198.

the other, then it was a sign of superfetation as the smaller baby had not had the chance to grow as large as the other one.<sup>123</sup>

Like today, many authors provided advice regarding what to do after intercourse in order to help the process of conception. The first advice given to the couple was to not separate immediately after their seed had been cast as that would allow cold air to reach the seed and spoil it, but to instead give the womb time to close.<sup>124</sup> Unfortunately, the early modern manuals do not provide a specific amount of time that the couple should wait before releasing themselves from their embrace. However long a couple waited, once they had separated the manuals instructed that the man was to leave so that the woman could rest in quiet and avoid all troublesome thoughts.<sup>125</sup> One manual instructed the woman to also raise her legs to help the seed stay in place,<sup>126</sup> a piece of advice which many couples still follow today. Along with these instructions as to what the woman was supposed to do, there were instructions regarding what she was not to do. During the time she was laying quietly, the woman was not to talk, cough, sneeze, or move around too much as this could dislodge the seed and prevent conception.<sup>127</sup> From that point it was a matter of waiting to determine whether or not she had conceived.

### **Barrenness**

If a couple had been trying to conceive for some time without any success, they may have consulted a medical manual to discover how to treat their barrenness. As opposed to today where barrenness, or sterility, is considered a permanent condition, in the early modern era barrenness was seen as either a temporary condition which could be remedied or as a lifelong condition

<sup>123</sup> Anonymous, *The English Midwife*, 198.

<sup>124</sup> Anonymous, *The New Aristotle's Master-piece*, 60-61.

<sup>125</sup> Anonymous, *Aristotle's Master-piece*, 93-94.

<sup>126</sup> Anonymous, *Aristoteles Master-piece, or, The Secrets of Generation*, 190.

<sup>127</sup> Anonymous, *Aristotle's Compleat Master-piece*, 33.



which could not.<sup>128</sup> While in the present day a couple is not said to be barren until they have failed to conceive for over a year and had extensive medical tests done to determine their fertility, an early modern couple was said to be barren for as long as they tried and failed to conceive. In either case, barrenness was viewed in deeply unfavorable terms as a sign of God's displeasure and a failure on the part of the woman.<sup>129</sup> While the medical manuals sought to help couples suffering from temporary barrenness, they did make reference to the fact that some couples would remain barren, either because of flaws within their bodies, or because the couple was improper for one another.

According to the medical manuals used in this study, there were three types of barrenness: natural barrenness, accidental barrenness, and barrenness against nature. Natural barrenness occurred when both couples were healthy, but nonetheless failed to conceive.<sup>130</sup> Accidental barrenness was caused by an infirmity of the body such as deformed sexual organs or a generally unhealthy body.<sup>131</sup> The final type of barrenness was barrenness against nature, or barrenness that is caused by diabolical means such as an enchantment put upon the couple by someone in league with the Devil.<sup>132</sup> Because each of these types of barrenness were believed to be caused by different things, the treatments used to cure them tended to differ as well, though one common treatment amongst these causes was the use of aphrodisiacs.

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<sup>128</sup> Evans, *Aphrodisiacs*, 6-7.

<sup>129</sup> Petrina Brown, *Eve: Sex, Childbirth, and Motherhood Through the Ages*, 75-76, and Patricia Crawford, "The Construction and Experience of Maternity in Seventeenth Century England," in *Women as Mothers in Pre-Industrial England*, ed. Valerie Fildes, (New York: Routledge, 1990) 19. This blame falling solely on the woman is interesting considering *The Trotula* states that "Conception is impeded as much by the fault of the man as by the fault of the woman." Monica H. Green, ed., *The Trotula: A Medieval Compendium of Women's Medicine*, (Philadelphia: University of Pennsylvania Press, 2001), 113.

<sup>130</sup> Culpeper, 1651, 89; Anonymous, *Aristotle's Last Legacy*, 45.

<sup>131</sup> Culpeper, 1651, 89; Anonymous, *Aristotle's Last Legacy*, 47.

<sup>132</sup> Anonymous, *Aristotle's Last Legacy*, 70.

Although natural barrenness was not believed to be the result of physical defects in the couple, physicians pointed to specific causes which could result in a couple being barren.

According to Nicolas Culpeper and the anonymous author of *Aristotle's Last Legacy*, there were four main causes for natural barrenness. These were a lack of love between the couple, a lack of pleasure in intercourse, the couple having the same complexions, or the letting of blood from a virgin's arm before menarche.

In the case of a lack of love between the couple the author of *Aristotle's Last Legacy* explained that, "Love is that vital Principle that ought to animate each Organ in the Act of Generation, or else it 'twill be spiritless and dull; for if their hearts be not united in love, how should their Seed unite to cause Conception?"<sup>133</sup> Thus, according to many of the manuals, a pregnancy could never be the result of a rape, though this theory was later challenged by the anonymous author of *Aristoteles Master-piece, or The Secrets of Generation* who stated the state of the woman panicking while being attacked could accidentally release seed, resulting in conception.<sup>134</sup> Because love was assumed to be a requirement for conception, Culpeper, as well as other authors, addressed the lack of love between a couple by imploring parents to not force their children to marry against their will to someone they had no attraction, for this would result in sorrow for the whole family.<sup>135</sup> While the idea of marrying solely for love may not have existed during this period, physicians nonetheless argued that love between the couple was necessary in order for the couple to be blessed with children and for the family line to continue.

Similar to the lack of love between a couple, the authors wrote that because pleasure was viewed as a necessary part of conception, the lack of it would cause barrenness. The anonymous

<sup>133</sup> Anonymous, *Aristotle's Last Legacy*, 46. Unfortunately, the authors who discussed the lack of love causing barrenness did not further explain if they meant desire, attraction, or any other meaning which could be derived from such a capacious word.

<sup>134</sup> Anonymous, *Aristoteles Master-piece, or The Secrets of Generation*, 73-74.

<sup>135</sup> Culpeper, 1651, 85-86.

author of *The English Midwife* stated that the lack of pleasure could inhibit conception because the body required a certain amount heat, produced during intercourse, in order for the process of conception to take place. Without this heat, the seed from one or both partners would either not be released, or once released, would not be concocted properly, resulting in barrenness. The way to correct this issue was once again a relatively simple one, and that was to ensure that both members of the couple received an adequate amount of pleasure during intercourse. The author of *The New Aristotle's Master-piece* instructed husbands to take the time to arouse their wives in order to ensure that the womb released its seed, and not to rush through the sexual act.<sup>136</sup> However, the basic advice given above was all that authors provided; these manuals did not provided any advice as to how to make sex more pleasurable for the woman involved.

Another cause of natural barrenness could be from the couple having the same complexions, as practitioners stated that “the Universal Course of Nature being formed by the Almighty of a Composition of Contraries, cannot be increased by a composition of Likes.”<sup>137</sup> Because the world was made up and functioned through a system of opposites, the authors argued that the couple must have complementary complexions in order for conception to take place. For example, a woman with a hot and wet complexion would not be able to have children with a man who also had a hot and wet complexion, though she would be able to have children with a man who had a cold and dry complexion. This was one of the few causes of barrenness which the manuals stated could not be fixed, because each person was born with their particular complexion. Thus men and women should look closely to determine their potential spouse’s complexion.<sup>138</sup> While this theory was still prevalent in the latter part of the eighteenth century, there was at least one author who expressed doubt. In Jane Sharp’s 1671 manual she stated that

<sup>136</sup> Anonymous, *The New Aristotle's Master-piece*, 59.

<sup>137</sup> Anonymous, *Aristotle's Compleat and Experienc'd Midwife*, 129.

<sup>138</sup> Anonymous, *Aristotle's Compleat and Experienc'd Midwife*, 129.

she did not believe that two people could be so much alike in their complexions that they could not conceive.<sup>139</sup> Sharp's statements suggested that notions of complexions were more complicated than simply hot, dry, cold, and wet and that there might be degrees to each of these complexions than the other authors failed to indicate. Sharp's statement is also unusual in that of the eight authors who discussed the problem of complexions, she was the only author to express doubt. Other authors either accepted this theory, or did not mention it.

The final perceived cause of natural barrenness was the practice of the letting of blood from the arm of a young woman or girl before menarche. The authors' reasoning was that letting blood from the arm would prevent the blood from reaching the womb, thus not allowing the creation of an optimal environment needed for conception and the growth of the fetus.<sup>140</sup> If a physician believed that a prepubescent girl needed to be bled, it was recommended that the blood instead be pulled from the foot as that would allow the blood to still reach the womb before being let out of the body.<sup>141</sup> What is unusual about this theory is that it continued to be espoused over 120 years after Harvey's theory of blood circulation was published, which would have likely discredited this theory by clarifying that blood released from one part of the body would not have affected blood travelling to other parts of body.

While the causes of natural barrenness could not be seen, accidental barrenness was another matter. Accidental barrenness was typically deemed the result of a physical defect of the body or illness in one part of the couple. Several of the manuals stated that most likely the fault of accidental barrenness lay in the woman and there were many more causes which would result in a women being barren. However, practitioners concluded a man would be fruitful as long as

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<sup>139</sup> Sharp, 98.

<sup>140</sup> Culpeper, 1651, 86.

<sup>141</sup> Anonymous, *Aristotle's Compleat and Experienc'd Midwife*, 130.

he was considered healthy and had a proper diet and exercise.<sup>142</sup> The manuals spent more time on these causes of barrenness than they did on any other. The authors would present one of the causes of accidental barrenness, followed by their prescribed treatment. Treatments were often based on the theories of humors and complexions and the properties of the botanical materia medica being used for said treatments. An example of this is presented in the anonymous author's *Aristotele's Masterpiece, or, The Secrets of Generation*, where endive, which had cool and wet properties, was recommended for women whose wombs were too hot and dry,<sup>143</sup> while the author said it should be avoided by women whose wombs were considered to be too cold and wet.<sup>144</sup>

If a couple who were trying to conceive could not, even though they were both healthy, had different complexions, had pleasure during intercourse, etc., they may have considered that their barrenness was caused by diabolical means. Although ideas about the supernatural were falling out of favor in literate elite circles, many people still believed in witches and magic. This decline in belief was reflected in the laws which were passed and the number of manuals which addressed the topic of witchcraft. According to Angus McClaren, concerns about witchcraft led to the passage of laws in 1542, 1563, and 1604 which forbade the use of witchcraft to affect a couple's fertility. However, the growing disbelief of elites in witchcraft resulted in all these laws being repealed by 1736.<sup>145</sup> Out of the forty manuals evaluated for this study, six of the manuals address barrenness caused by enchantment. Though some manuals, such as the 1684 edition of *Aristoteles Master-piece, or The Secrets of Generation*, addressed the cause only to discredit it

<sup>142</sup> Culpeper, 1651, 91.

<sup>143</sup> Anonymous, *Aristoteles Master-piece, or, The Secrets of Generation*, 89.

<sup>144</sup> Anonymous, *Aristoteles Master-piece, or, The Secrets of Generation*, 86.

<sup>145</sup> Evans, *Aphrodisiacs*, 39.

by stating, “Many there are that conceive Barrenness is frequently caused by inchantation, but those opinions are altogether frivolous and vain.”<sup>146</sup>

The remaining manuals then discussed four different ways to reverse an enchantment placed on the couple. The most popular of these remedies was for the husband to urinate through his wife’s wedding ring without letting a drop run outside of it.<sup>147</sup> The next most popular remedy consisted of the wife carrying St. John’s wort, a herb often used to ward off evil, or making a plaster of it to apply to the lower back.<sup>148</sup> The final two cures listed involved the husband drinking water which had been dropped from a horse’s mouth,<sup>149</sup> or carrying a loadstone or heart of a turtledove.<sup>150</sup> The lack of coverage in the manuals as well as the lack of remedies for barrenness caused by enchantment demonstrated that magical explanations fell out of favor due to the changing ideas of science and medicine. The reason for this was likely a result of what Rene Descartes would call “methodological scepticism,” a form of rationalism which stated that one must doubt every idea until said idea had been proven through personal observation.<sup>151</sup> Because the authors of these medical manuals could not see how curses affected a couple’s fertility or how the above remedies allowed a couple to conceive, they no longer included this topic in their manuals. This is demonstrated by the fact that the manuals which mention barrenness by enchantment were published between the years 1656 and 1682, with the exception of the 1749 edition of *Aristotle’s Last Legacy*, though much of the information from that manual had been pulled from manuals published in the prior century.

<sup>146</sup> Anonymous, *Aristoteles Master-piece, or, The Secrets of Generation*, 85.

<sup>147</sup> Sharp, 101; Culpeper, 1651, 113; Anonymous, *Aristotle’s Last Legacy*, 70.

<sup>148</sup> Anonymous, *The English Midwife*, 178; Anonymous, *Aristotle’s Last Legacy*, 70.

<sup>149</sup> Chamberlayne, 67.

<sup>150</sup> Anonymous, *Aristotle’s Last Legacy*, 70.

<sup>151</sup> Derek K. Wilson, *A Magical World: Superstition and Science from the Renaissance to the Enlightenment* (New York: Pegasus Books, 2018), 177.

While modern medical treatment tends to take the form of pills or fluids taken intravenously or orally, there were many more types of treatments available to a woman in the early modern era that physicians considered to be medically sound. These included emetics, pessaries (substances a woman placed in her vagina), electuaries (medicinal substance sweetened with sugar or honey), pills, salves, plasters, or wines spiced with various herbs. One especially interesting treatment of the early modern era used fumes.<sup>152</sup> A woman would place herbs on either a burning brazier or in boiling water, stand over it, and receive the fumes into her vagina. Fumes could also be used to discover whether or not a woman was fertile. In this test a woman would have odiferous fumes waved near her vaginal opening with her clothing wrapped tightly around her to prevent the fumes from escaping. If she could smell the fumes in her nose or taste it in her mouth, then she was considered to be fertile as that meant that the womb was not blocked up.<sup>153</sup> Such treatments and the fertility tests were possible because of the prevailing notion that the womb had the ability to smell and was affected by odors. Merry Wiesner claimed that this assumption was disregarded in the sixteenth century.<sup>154</sup> However, the manuals used in this study from the eighteenth century continued to prescribe odiferous treatments two hundred years after Wiesner claimed they had fallen out of favor with physicians.

During the early modern era ideas regarding what ingredients should be prescribed as treatments for the various causes of barrenness also shifted. For most of the sixteenth, seventeenth, and eighteenth centuries, treatments for barrenness and other diseases were based on the principles of non-naturals put forth by Galen. These non-naturals included diet, sleep,

<sup>152</sup> Treatments involving fumigation was not original to the early modern era as *The Trotula* referred to the use of fumatics for those trying to conceive. Green, *The Trotula*, 121.

<sup>153</sup> Raynalde, 191; Anonymous, *Aristoteles Master-piece, or, The Secrets of Generation*, 186-187.

<sup>154</sup> Wiesner, 33.

exercise, peace of mind, good air, and evacuations, one of which was sexual intercourse.<sup>155</sup>

Although the term “non-naturals” was not often used in the manuals, the treatments presented for the most part fell within these six categories. An example of this is demonstrated in the manual written by Christof Wirsung at the end of the sixteenth century. This manual recommended that if a woman’s womb was considered to be too hot, she should avoid eating specific foods such as hot and fat meats, strong wines, and certain spices including fennel, thyme, and rue.<sup>156</sup> Other authors also presented dietary advice. Nicolas Culpeper instructed men to eat the sexual organs of various animals such as bulls, boars, and foxes in order to strengthen their own organs of generation.<sup>157</sup> Culpeper also added that in order to promote fruitfulness the couple should eat the meat of animals which were considered to be addicted to sexual intercourse such as partridges, quails, sparrows and pheasants, as they were supposed to increase the couple’s sex drive.<sup>158</sup> However, during the eighteenth century the use of animals parts began to decline,<sup>159</sup> though a particular reason for this has not been discovered.

Like with any prescribed treatment, the key to the non-naturals was that of moderation. Too much or too little of them would not only not treat the problem at hand but could cause additional issues. For example, while a woman trying to conceive needed to be sure she got enough sleep, too much sleep could cause barrenness according to the author of *Aristotele’s Master-piece, or The Secrets of Generation* in 1684.<sup>160</sup> This particular author, as well as others, held this same principle regarding sexual intercourse. While early modern authors considered a

<sup>155</sup> Roy Porter, “The Eighteenth Century,” in *The Western Medical Tradition: 800 BC to AD 1800*, (Cambridge: Cambridge University Press, 1995), 417.

<sup>156</sup> Wirsung, 296.

<sup>157</sup> Culpeper, 1651, 124. Eating the sexual organs of an animal was not new to the early modern era as *The Trotula* advocated that the consumption of an animal’s sexual organs, particularly a hare or pig’s, was helpful in remedying barrenness. Green, *The Trotula*, 95.

<sup>158</sup> Culpeper, 1651, 88.

<sup>159</sup> Porter, “The Eighteenth Century,” 424.

<sup>160</sup> Anonymous, *Aristoteles Master-piece, or, The Secrets of Generation*, 86.



moderate amount of sex to be healthy, having sexual intercourse too much could result in the weakening of the seed which could either prevent conception or cause the resulting child to be weak and sickly.<sup>161</sup> However, the non-naturals began to fall out of favor with physicians as healing became more medically centered on the use of drugs.<sup>162</sup> These drugs were not like drugs prescribed today, but were made up of herbs and as the eighteenth century progressed, mineral and metallic substances<sup>163</sup> With the discovery of new substances, the practice of medicine continued to change and evolve.

The most popular treatments prescribed for any type of barrenness in the early modern era were aphrodisiacs. In the early modern era aphrodisiacs were considered to be important not just for sexual intercourse but also for conception. Jennifer Evans argued that the inclusion of aphrodisiacs in medical manuals could be attributed to a period of population stagnation in the century between 1650 and 1750.<sup>164</sup> The lack of manuals published prior to 1650 in this study does not help to either support or challenge Evans' claim. While the word "aphrodisiacs" is not used in any of the manuals in this study, a good number of recipes in the manuals were said to increase fruitfulness, which was one of the goals of taking aphrodisiacs during this time.

The vast majority of changes within the fields of medicine and treatment occurred in the eighteenth century. While some changes had occurred in the prior centuries, including the discovery of new plants in the Americas and Asia and the retrieval of classical drugs during the Renaissance,<sup>165</sup> these changes introduced the practice of using chemical substances, such as

<sup>161</sup> Anonymous, *Aristoteles Master-piece, or, The Secrets of Generation*, 16.

<sup>162</sup> Porter, "The Eighteenth Century," 417.

<sup>163</sup> Porter, "The Eighteenth Century," 421, 423.

<sup>164</sup> Evans, *Aphrodisiacs*, 13.

<sup>165</sup> Wear, "Medicine in Early Modern Europe," 298.

minerals and metals, which would become more popular and obtain wider use in the eighteenth century.<sup>166</sup>

One change which occurred in knowledge concerning barrenness came into effect because of the discovery of spermatozoa in 1677. While previously physicians had for the most part attributed barrenness to women, this discovery led to the quality of a man's sperm being discussed as a possible cause of infertility. If a man's semen had a low count of sperm or the sperm did not move properly, then physicians would be able to determine that it was the man who was the problem. In the manuals that this information appeared in there were still discussions regarding the humors of the body and how they affected the sperm.<sup>167</sup> However, this cause of barrenness was not mentioned in any of the manuals used in this study, indicating that this idea was slow to be implemented into vernacular manuals in England.

While there were numerous treatments for women suffering from infertility, there were very few treatments if the perceived problem lay with men. The most prevalent treatment prescribed by physicians in the manuals involved helping a man overcome impotence by means of eating certain foods. During the early modern era physicians believed that a man's erection was caused by spirits or wind, which was how practitioners referred to life or nervous energy.<sup>168</sup> Physicians argued a man's inability to get and maintain an erection was caused by a lack of the necessary "wind." The manuals advised that the way for a man to regain this was to eat "windy" foods, or foods which were known to fill the body with air and cause flatulence. These foods included pine nuts, pistachios, artichokes, parsnips, onions, beans, ginger, cloves, and cinnamon.<sup>169</sup> Evans argued that authors began to criticize this theory sometime in the middle of

<sup>166</sup> Porter, "The Eighteenth Century," 423.

<sup>167</sup> Evans, *Aphrodisiacs*, 77.

<sup>168</sup> Chamberlayne, 23.

<sup>169</sup> Evans, *Aphrodisiacs*, 111-112.

the sixteenth century, and by the eighteenth century the use of windy foods to aid in conception had been rejected. The two main reasons for this was that anatomical dissections had demonstrated that the penis was not a hollow organ which filled with air, but a relatively solid one which filled with blood. The second of these was that physicians discovered that the eating of these windy foods did not help men to produce more seed.<sup>170</sup> Once the couple believed their fertility problems had been solved and their bodies were in good health, they would once again continue to try and conceive in hopes that their family would soon gain another member.

### **Signs of Conception**

Because a wife's most crucial duty was to produce heirs for her husband, soon after a couple had been wed, she would begin to look for signs that she may have conceived. In the early modern era, there was no sure sign that conception had taken place until the child began to move in the womb, also known as quickening, which did not occur until three or four months into a pregnancy.<sup>171</sup> Prior to that event, a woman could only guess based on certain symptoms her body experienced. Some of the symptoms physicians stated a woman might experience in the early modern era are the same as those a woman in the present might experience. These included nausea, vomiting, tenderness of the breasts, and the cessation of menses.<sup>172</sup> But even these symptoms may not have started for a month or so after conception had taken place. Wiesner argued that many medical manuals in the early modern era would warn against taking a cessation of menses as a sign of pregnancy because it could be caused by numerous other health factors,<sup>173</sup>

<sup>170</sup> Evans, *Aphrodisiacs*, 114-115.

<sup>171</sup> Mary E. Fissell, *Vernacular Bodies* (Oxford: Oxford University Press, 2004), 152.

<sup>172</sup> Mauriceau, 18-19.

<sup>173</sup> Wiesner, 78.

though none of the manuals used in this study gave this warning, and over twenty manuals suggested it as a sign of conception.

Because married couples were eager to know whether conception had occurred, some of the manuals offered signs of conception which could be noticed immediately. These included the woman sensing a coldness of the pubic area immediately after intercourse, as it was believed the heat which normally existed there would be pulled inward to aid in the work of conception.<sup>174</sup> According to William Sermon, even the husband could tell if conception occurred if during intercourse he felt a sucking sensation on his “yard,” or penis, or afterwards when he withdrew from his wife he felt that his “yard” was not too moist.<sup>175</sup> Sermon, however, was the only author to specifically present this male physical sensation as a possible sign of conception.

Other symptoms a woman might experience which physicians purported to be signs of pregnancy were experienced all over the body. Starting from the top of the body, Thomas Chamberlayne, who in 1656 translated the French Louise Boursier Bourgeois’s manual *The Compleat Midwife’s Practice*, claimed a woman might experience headaches, vertigo, and acne.<sup>176</sup> Pierre Dionis, writing sixty years later, added to this list toothaches, excessive spitting, and mood swings which caused a woman to be morose, slothful, or drowsy.<sup>177</sup> Moving further down the body, other symptoms of pregnancy included a cold backbone, strange cravings or appetites, “sour belches” which is likely what today would be called acid reflux, a coldness felt in the breast when water was drunk, or an inordinate pulse of the heart.<sup>178</sup>

Along with these physical signs, the authors of the manuals provided various tests that a woman could conduct in order to determine if she was pregnant, many of which involved using

<sup>174</sup> Culpeper, 1651, 126; Chamberlayne, 72.

<sup>175</sup> Sermon, 18

<sup>176</sup> Chamberlayne, 72.

<sup>177</sup> Dionis, 65.

<sup>178</sup> James Wolveridge, *Speculum Matricis Hybernicum* (London: 1670), 96-97.

the woman's urine. The study or tasting of a person's urine, or uroscopy, to diagnose diseases had been used for centuries, though it was during the early modern era that it began to fall out of favor. Some of the tests that authors offered included a woman placing her urine in a jar for three days. After that she was to strain the urine through a linen cloth, and if living things could be seen in the urine then the woman was said to be pregnant.<sup>179</sup> Another test told the woman to place a green nettle in her urine overnight. In the morning, if the woman was pregnant, the nettle would have red spots on it, however, if the woman was not pregnant, then the nettle would turn black.<sup>180</sup> This test appeared in many other manuals, however in several of them the "nettle" had become a "needle,"<sup>181</sup> so perhaps this test may have originally been taken from a handwritten manuscript with the word "nettle" confused for "needle." This test was included in the 1702 manual entitled *Aristotle's Master-piece*, but what is unusual is that one page prior the author stated that no certain judgement could be made by the use of urine.<sup>182</sup> While these two statements seem counterintuitive, it is possible that the author was stating the practice of the physician tasting or physically examining the patient's urine could not provide an answer as to whether or not a woman might be pregnant. Based on the results of these tests a woman would either conclude she was pregnant or that she had failed to conceive and would need to try again.

## **Conclusion**

In the early modern era a woman's role in society was dependent upon who she married and how many children she had. A woman with many children was considered to be blessed by God while a woman who could not conceive was believed to be cursed or forgotten by God. Because of the

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<sup>179</sup> Chamberlayne, 73.

<sup>180</sup> Culpeper, 1651, 128.

<sup>181</sup> Wolveridge, 99.

<sup>182</sup> Anonymous, *Aristotle's Master-piece*, 150-151.

importance of reproduction, married couples sought advice from those who were considered to be knowledgeable in this area, such as physicians, in discovering how conception took place, how to remedy barrenness, and finally how to determine if a woman had conceived. However, determining that a woman was pregnant was merely the first step as miscarriage was a very real concern. Women commonly sought advice from their medical manuals during pregnancy because miscarriage threatened to undermine a woman's ability to fulfill her role as a wife and mother and give birth to the next generation.

## **Chapter 2: Fetal Development, Antenatal Care, and Miscarriage**

### **Introduction**

Once a woman believed herself to be pregnant, the next and most important step on the path to motherhood was to ensure that the fetus within her grew until the proper time for birth. In order for this to occur, it was imperative that the woman take proper care of both herself and the fetus. According to early modern medical and cultural understandings of pregnancy, the fetus saw, heard, and felt everything the mother experienced. Thus, not only was the mother's diet important, but also what she exposed herself to in regards to sights, sounds, and emotions.<sup>183</sup> Miscarriage was the greatest fear a pregnant woman faced. In order to prevent a miscarriage, a woman would look to a childbirth manual to discover how best to keep herself and the fetus healthy. Like modern-day pregnancy guides which tell a woman what she should or should not do in regards to eating, exercise, and medical treatments, early modern English pregnancy manuals likewise provided such advice. While the topics discussed in these manuals mirror contemporary concerns, the advice presented to expectant mothers during the early modern era varied greatly from the guidance provided today. As physicians began to better understand the human body, authors of pregnancy manuals revised their instructions to expectant mothers, though the majority of the advice remained the same for nearly 300 years.

Many of the terms used in the early modern period are unfamiliar to modern-day readers because they eventually fell out of fashion and were replaced. When these medical terms are first mentioned, the modern-day equivalent will be provided, but from then on, the historical term will be used.

<sup>183</sup> Jacques Gelis, *The History of Childbirth*, trans. Rosemary Morris (Boston: Northeastern Press, 1991) 53.

### **The Growth of the Child in the Womb**

By the end of the seventeenth century, physicians had acquired knowledge of gross anatomy such as bones, joints, and organs. This foundational knowledge enabled eighteenth-century physicians to focus on analyzing lesser-known aspects of the human body such as the nervous system and the lacteal system, along with further investigations of specific organs such as the eyes, blood vessels, and the nose and throat.<sup>184</sup> The invention of the microscope in the latter part of the seventeenth century aided physicians' ability to study smaller parts of the human body.<sup>185</sup> From the late seventeenth century through the eighteenth century anatomists devoted a large amount of time to the study of embryology, or how the fetus developed in the womb. In the seventeenth century some of the authors included illustrations showing an embryo at various stages of development. The fetus was, for the most part, only depicted as fully formed as opposed to being formed in different stages.<sup>186</sup> But this practice was discontinued in the eighteenth century for unknown reasons.

Like reproductive anatomy, the understanding of how a fetus grew in the womb became more comprehensive during the early modern era. This was based on the expanding field of embryology in England and on the continent which required the dissection of animals during various stages of gestation. One of the more commonly used animals was the rabbit. Reinier de Graaf supposedly dissected over one hundred rabbits in order to understand how conception occurred and how a fetus grew in the womb.<sup>187</sup> His process involved inspecting rabbits at various times following copulation, including half an hour and six hours afterwards. De Graaf continued

<sup>184</sup> Roy Porter, "The Eighteenth Century," in *The Western Medical Tradition: 800 BC to AD 1800*, (Cambridge: Cambridge University Press, 1995), 385.

<sup>185</sup> Porter, "The Eighteenth Century," 388.

<sup>186</sup> Gelis, 50.

<sup>187</sup> William Smellie, *A Treatise on the Theory and Practice of Midwifery* (London: 1762), 113.



by dissecting at later times including two, three, four, six, seven, twelve, and fourteen days after copulation. In doing this he observed the eggs being detached from the ovary and passing through the fallopian tube to the womb. Furthermore, he described the changes the egg went through as the rabbit fetus formed.<sup>188</sup>

In a similar manner William Harvey and other scientists experimented by breaking open chickens' eggs at various points after being laid in order to comprehend how a fetus developed during gestation. In 1651 Nathaniel Highmore published *The History of Generation* which contained the first published observations of a chick blastoderm through a microscope lens.<sup>189</sup> The same year, William Harvey published his *De Generatione Animalium* which focused on both chick and mammal embryology. In it he described the development of an animal embryo through a process known as epigenesis where the organism develops in stages as opposed to emerging as a fully formed being at the time of birth.<sup>190</sup> As mentioned in the previous chapter, the use of animal dissections to draw conclusions regarding the human body often resulted in misunderstandings and the popularization of inaccurate information. However, many of these mistakes were eventually corrected as physicians gained access to more bodies of deceased pregnant women.

While physicians learned a great deal from their animal dissections, using animals as human analogues could pose problems. For one, both chickens and rabbits have much shorter gestations than humans, at twenty-one and thirty days respectively. This possibly led physicians to assume a human fetus developed more quickly than it actually did. Secondly, although the physiology of rabbits, chickens, and humans are somewhat similar, there are enough differences

<sup>188</sup> Anonymous, *The New Aristotle's Masterpiece*, (London:1750), 45-46.

<sup>189</sup> Charles W. Bodemer "Materialistic and Neoplatonic Influences in Embryology," in *Medicine in Seventeenth Century England*, ed. Allen G. Debus (Berkeley: University of California Press, 1974), 188.

<sup>190</sup> Bodemer, 191-192.

that inaccurate comparisons could result. Yet animal dissections were necessary at the time because it was extremely rare for a deceased pregnant woman to be brought to the anatomists with the fetus still inside of her. According to Nicolas Culpeper, most pregnant women who were dissected had either miscarried, been delivered before their death, or been delivered via caesarean section after their death.<sup>191</sup>

The early modern era had several competing theories as to what happened during conception. These theories were then adapted over time alongside new discoveries made in regards to the human body. New discoveries also led physicians to revise their theories as to how the child developed in the womb. During the 270-year period of this study, there were four main theories as to how the child developed in the womb. Cristof Wirsung presented the first of these in his 1598 manual, as Thomas Raynalde did not discuss the growth of the child in utero in his 1541 manual. According to Wirsung, in the first six days after conception, the male and female seed swelled up like a bladder filled with air. On the fifteenth day, this “bladder” drew blood into it in order to form the organs. The first organs formed were the liver, heart, and brain, which could be seen by the twenty-seventh day after conception.<sup>192</sup>

During the second and third month the body of the fetus formed completely to “perfection,”<sup>193</sup> though certain aspects of the body remained missing. In the fourth month of gestation the nails were formed and grew. By the fifth month a woman should be able to determine the gender of the fetus she was carrying. During the sixth month veins began to appear and connected all the organs of the body to one another. In the seventh month the marrow grew into the bones which were then hardened and strengthened in the eighth month. By the ninth month of gestation, the fetus had reached the accurate proportion of a human and was ready for

<sup>191</sup> Nicolas Culpeper, *A Directory for Midwives* (London: 1651), 55.

<sup>192</sup> Christof Wirsung, *The General Practice of Physick* (London: 1598), 503-504.

<sup>193</sup> Unfortunately the authors did not explain what they meant by “perfection.”

birth.<sup>194</sup> Unlike the vast majority of manuals used in this study, Wirsung's manual focused on diagnosing and treating the human body as a whole, and because of this, his description of the growing fetus was extremely brief, without much further explanation.

The next theory as to the development of the child in utero remained popular with physicians for close to fifty years and was included in eight different manuals from 1656 to 1711.<sup>195</sup> The manual which is especially helpful in understanding this theory was James Wolveridge's *Speculum Matricis Hybernicum*, published in 1670. Along with his description of the growth of the fetus, Wolveridge included images to correspond with his descriptions (see Figure 1). In the first week following conception, while the seeds were mixing it released a vital heat which generated fibers. The fibers produced at this time began to create the "chiefest organs:" the liver, heart, and brain.<sup>196</sup> Wolveridge argued that the organs were fully formed by the tenth day.<sup>197</sup> After this the navel vein, or umbilical cord, was formed with other veins throughout the body as well as with the lungs.<sup>198</sup> Once these organs had been formed, the next part of the child's body to form was the brain, spinal cord and other nerves. These organs were protected by the formation of the skull and spinal column. These bones started off soft, but were then hardened by the heat generated during this process.<sup>199</sup> According to Wolveridge and the other authors who espoused this theory, a period of only eighteen days passed from the moment

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<sup>194</sup> Wirsung, 504.

<sup>195</sup> Thomas Chamberlayne, *The Compleat Midwife's Practice Enlarged* (London: 1656); Nicolas Culpeper, *Culpeper's Directory for Midwives: or, A Guide for Women, The Second Part* (London: 1662); Peter Chamberlen, *Dr. Chamberlain's Midwives Practice* (London: 1665); James Wolveridge, *Speculum Matricis Hybernicum* (London: 1670); Jane Sharp, *The Midwives Book* (London: 1671); Anonymous, *The English Midwife*, (London: 1682); Robert Barret, *A Companion for Midwives, Child-bearing Women, and Nurses* (London: 1699); Anonymous, *Aristotle's Compleat and Experienc'd Midwife*, (London: 1711).

<sup>196</sup> Wolveridge, 1-2.

<sup>197</sup> Wolveridge, 3.

<sup>198</sup> Wolveridge, 3-8.

<sup>199</sup> Wolveridge, 9-11.

of conception to the completion of a human form.<sup>200</sup> This opinion was yet another holdover from the time of Galen who held a gradualist view of the development of the embryo based on three stages: the coagulation of the seed, the formation of fetal parts, and the achievement of all body parts, though most practitioners would treat the fetus as a potential human being instead of an actual one.<sup>201</sup> After this, the fetus used the remaining time of the pregnancy to grow until it was ready for birth.

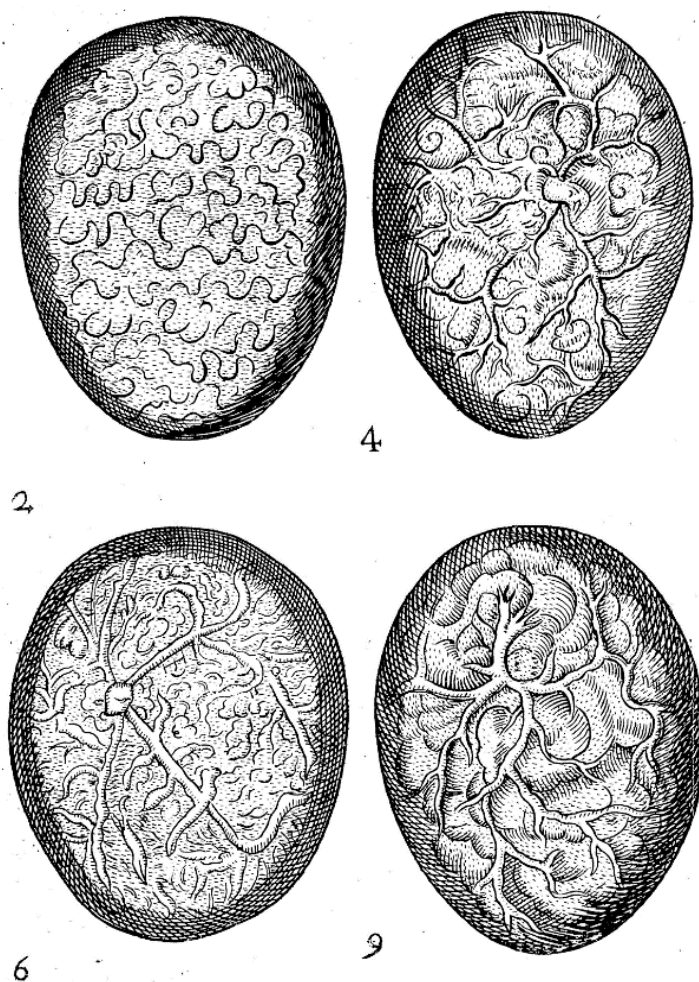


Figure 1: James Wolveridge's depiction of the initial formation of the fetus, *Speculum Matricis Hybernicum*, London, 1670

<sup>200</sup> Wolveridge, 12.

<sup>201</sup> Veronique Dasen, "Becoming Human: From the Embryo to the Newborn Child," in *The Oxford Handbook of Childhood and Education in the Classical World* ed. Judith Evans Grubbs and Tim Parkin (Oxford: Oxford University Press, 2013), 17, 19.

After the discovery of spermatozoa in the latter part of the seventeenth century by Antonie von Leeuwenhoek, another theory regarding fetal development appeared in the 1719 work of Pierre Dionis. According to Dionis, the various membranes which covered the fetus in utero were the first to form. While prior authors declared that there were three or four membranes which formed the secundine, or placenta, Dionis believed there were only two membranes. The first of these membranes was the external membrane called the chorion, and the second was called the amnios. Dionis tried to further explain these membranes to his readers by comparing them with the coverings of the brain.<sup>202</sup> He then explained that because life began with the circulation of blood, the first organ to form was the heart.<sup>203</sup> Other than his discussion of membranes Dionis did not transform understandings of how the fetus was formed, instead he jumped ahead to the argument as to when the fetus was considered “perfect” and received life.

The final theory put forth regarding this matter prior to 1770 was presented by one of the largest contributors to the field of obstetrics: William Smellie. Smellie, born in Lanarkshire, Scotland and educated at the University of Glasgow, eventually relocated to London where he offered classes in midwifery which were attended by over 900 male students and an unknown number of female students.<sup>204</sup> Unlike prior theories which stated that the fetus was fully developed within the first month after conception, Smellie believed that during the first month the embryo more closely resembled a tadpole in that its head was large while the rest of the body was small. This figure would gradually increase in magnitude until eventually the arms and

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<sup>202</sup> Pierre Dionis, *A General Treatise of Midwifery* (London: 1719), 89-90.

<sup>203</sup> Dionis, 86.

<sup>204</sup> John Peel, 2004 "Smellie, William (1697–1763), man-midwife." *Oxford Dictionary of National Biography*. 25 Oct. 2018.

<http://www.oxforddnb.com/view/10.1093/ref:odnb/9780198614128.001.0001/odnb-9780198614128-e-25752>.

thighs began to bud from the torso. The following month the arms and legs would begin to form and fingers began to separate, though this would not be completed until the third month. At the same time as the arms began to grow, two black specks would appear on each side of the head with a small hole forming between them. These specks would become the fetus' eyes while the hole would become its mouth.<sup>205</sup> Although Smellie did not provide an explanation as to how he came to this theory, it is likely that he had been able to dissect more pregnant women than previous authors as well as having the advantage of the microscope to study the tiny fetal form. Smellie did not mention anything else about the growth of the fetus except to say that the head of the fetus can be felt through the vagina anytime between the sixth and eighth month.<sup>206</sup> It can then be surmised that Smellie believed the fetus to be fully formed by the end of the third month and from that point on grew until the proper time for it to be born. Like with other developments of anatomy, Smellie's discoveries regarding fetal development were to supplant those originally presented.

Although there were a number of theories concerning fetal development, there were only two theories regarding when the child received life, the first of which claimed that it was determined by the gender of the fetus. Using humoral theory to support their argument, physicians such as Cristof Wirsung and the anonymous author of *Aristotle's Master-piece* wrote that the greater heat produced by the formation of a male child meant that the fetus was considered to be perfectly formed by the thirtieth day following conception. Following this logic, the creation of a female child produced less heat and therefore took anywhere from thirty-five to forty-five days to reach this stage of development.<sup>207</sup> Dionis tried to disprove this theory in the

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<sup>205</sup> Smellie, 180.

<sup>206</sup> Smellie, 181.

<sup>207</sup> Anonymous, *Aristotle's Master-piece*, (London: 1702), 11; Wirsung, 504.

first part of the eighteenth century by pointing out that most physicians debated whether or not the gender of the fetus affected its development.<sup>208</sup>

Although some authors in the early modern era believed that the gender of the fetus determined when it reached “perfection,” or was fully formed and able to receive a soul, others believed that the fetus received its soul at a certain point of development regardless of gender. According to the prior mentioned theory proposed by Wolveridge, physicians since the twelfth century believed that the child was perfectly formed within the first forty-five days after conception. It was at this point that the fetus received life and a soul,<sup>209</sup> though the authors did not elaborate on what this meant for the fetus as most physicians did not recognize that the woman was pregnant until the child moved at three or more months. While most authors during the fifty year period between 1656 and 1719 believed that the fetus reached perfection in forty-five days, the anonymous author of *The New Aristotle’s Masterpiece*, written circa 1715, believed that this perfection occurred on the fortieth day following conception.<sup>210</sup> Dionis presented other physicians’ arguments when he claimed that they stated this occurred at either thirty days, forty days, or even two or three months later.<sup>211</sup> In presenting various accounts of fetal development, Dionis illustrated the lack of agreement among physicians. Dionis himself stated that all these estimations were erroneous. As he saw it, the fetus received life as soon as the heart and vessels were capable of circulating blood.<sup>212</sup>

Although the authors of pregnancy manuals believed a fetus gained life within the first few months of the pregnancy, expectant mothers were told not to anticipate any movement from their fetus at that time. Like the varying theories regarding how long it took a fetus to be

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<sup>208</sup> Dionis, 86.

<sup>209</sup> Chamberlayne, 1656, 70.

<sup>210</sup> Anonymous, *Aristotle’s Compleat Master-piece*, (London: 1715?), 42.

<sup>211</sup> Dionis, 88.

<sup>212</sup> Dionis, 88.



perfectly formed, these authors had different ideas as to when the fetus first moved. Following the humoral theory regarding heat, Wirsung argued that a male fetus first moved on the fortieth day following conception while a female fetus did not move until the sixtieth day.<sup>213</sup> In the latter half of the seventeenth century, authors replaced this theory with one that was not reliant upon the fetus' gender. Peter Chamberlen and James Wolveridge both argued that the child did not move until the ninetieth day after conception.<sup>214</sup> It was at this point the fetus was deemed legally alive and to cause the death of the child after this point was punishable by law. Prior to the quickening if a woman lost her pregnancy the courts considered it to be an accident and no charges would be brought against the woman. However, if the child had quickened then the courts might investigate the woman for abortion, especially if the woman was unmarried, as they might suspect her of purposefully getting rid of her fetus.<sup>215</sup>

Chamberlen and Wolveridge were not the only authors to promote the ninety-day thesis, though others who put it forward presented it as part of mathematical formula. Jane Sharp, and other authors within a thirty year period of her, stated that a child moved in double the amount of time it took them to form and was born three times as long as it took for it to first move.<sup>216</sup> According to this theory, if a fetus was perfectly formed at forty-five days, then the fetus would move at ninety, and thus be born at 270 days. This estimation is not far from the documented gestation period of 266 days doctors use today.

Along with discovering how a fetus formed in the womb, received a soul, or when it first moved, physicians in the early modern era sought to discover in what position the fetus lay while in the womb. Although understanding how the child was placed in the womb may not seem like

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<sup>213</sup> Wirsung, 504.

<sup>214</sup> Chamberlen, 89; Wolveridge, 17.

<sup>215</sup> Merry E. Wiesner, *Women and Gender in Early Modern Europe*, 2<sup>nd</sup> ed., (Cambridge: Cambridge University Press, 2000), 78.

<sup>216</sup> Sharp, 145.



something imperative to woman's understanding of her pregnancy, one author revealed why physicians placed such an importance on understanding how the child lay in the womb. The anonymous author of *Aristotle's Compleat and Experienc'd Midwife* stated that though not two in ten physicians could agree on this matter, it was imperative that a midwife know how to adjust the position of the fetus if it was turned incorrectly at the time of birth.<sup>217</sup> The first author to bring up this debate was Nicolas Culpeper in his 1651 *Directory for Midwives* and the last was the anonymous author of *Aristotle's Compleat Master-piece* published circa 1715.<sup>218</sup> The perspectives most commonly referred to in this debate were those of Hippocrates and Renaldus Columbus. According to Hippocrates, "The *Child* as he is placed in the Womb, To have his Hands at his Knees, and his Head bent down towards his Feet, so that he lies round together, his Hands upon both his Knees, and his Face between them, so that each Eye toucheth each Thumb, and his Nose betwixt his Knees."<sup>219</sup> The other theory regarding fetal position the authors referred to was that of the sixteenth century anatomist Renaldus Columbus, who stated:

That the Figure of the *Child* is round in the Womb, the right Arm bowed, the Fingers thereof under the Ear, and above the Neck, the Head bowed down so that the Chin toucheth the Breast, the left Arm bowed above both Breast and Face, and the left Arm is propped up by the bending of the right Elbow, the Legs are lifted upwards, the right of which is so lifted up that the Thigh toucheth the Belly, the Knee the Navel, the Heel toucheth the left Bottosk, & the Foot is turned back and covereth the Secrets, the left Thigh toucheth the Belly, and the Leg is lifted up to the Breast, the Back lies outward.<sup>220</sup>

Based on these two descriptions alone, for no images were provided in any of the manuals to coincide with these descriptions, the one provided by Hippocrates seems to be the closest to what William Smellie would describe as the fetal position over 110 years later.

<sup>217</sup> Anonymous, *Aristotle's Compleat and Experienc'd Midwife*, 46.

<sup>218</sup> This manual did not have a definitive publishing date like others used in this study according to the Eighteenth Century Collections Online database.

<sup>219</sup> Culpeper, 1651, 73.

<sup>220</sup> Culpeper, 1651, 73-74.

According to Smellie, “the chin rests upon the breast, the thighs are pressed along the belly, the heels applied to the breech, the face being placed between the knees, while the arms cross each other round the legs.”<sup>221</sup>

Another question which physicians struggled to understand during the eighteenth century was the purpose of the amniotic fluid which surrounded the fetus in the womb. In the early modern era, there were several names for this fluid including “waters” and “liquor amnii.”<sup>222</sup> While the fluid itself had been mentioned in prior manuals, the authors did not attempt to explain its purpose. The first author to do so was Pierre Dionis in his 1719 manual entitled *A General Treatise of Midwifery*, though he does explain what previous medical authors believed. According to Dionis, physicians argued that the fluid was the urine of the child as it had a salty taste.<sup>223</sup> Thirty years later, the anonymous author of *The New Aristotle’s Masterpiece* stated that other physicians believed the child was nourished by the fluid either in full or in combination with the umbilical vein.<sup>224</sup> Dionis did not agree with previous physicians and instead provided his account of the three purposes of the fluid: to prevent the membranes which surrounded the fetus from pressing upon it; help the fetus to move around while in utero; and to moisten and lubricate the birth canal to aid the process of labor.<sup>225</sup> The author of *The New Aristotle’s Masterpiece* argued that the main purpose of this fluid was to suspend the fetus while in utero and to protect the fetus from injury, though s/he acknowledged that there might be other uses for the fluid as well.<sup>226</sup>

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<sup>221</sup> Smellie, 178.

<sup>222</sup> Dionis, 92; Anonymous, *The New Aristotle’s Masterpiece*, 38.

<sup>223</sup> Dionis, 92.

<sup>224</sup> Anonymous, *The New Aristotle’s Masterpiece*, 38.

<sup>225</sup> Dionis, 94.

<sup>226</sup> Anonymous, *The New Aristotle’s Masterpiece*, 39.

The final aspect of the fetus in utero which physicians in the early modern era sought to understand was how the child gained nourishment from its mother prior to birth. According to Nicolas Culpeper, some physicians held the belief of the ancient Roman natural philosopher Alcmaeon that the fetus absorbed blood from the mother all over its body like a sponge.<sup>227</sup> Other physicians and authors held Democritus' belief that the fetus obtained its nourishment by sucking in the amniotic fluid through its mouth. Their argument in favor of this theory was that the child knew how to suckle immediately after birth and that the child had excrement in its intestines at the time of birth. However, the anonymous author of *Aristotle's Compleat and Experienc'd Midwife* argued in 1711 that the infant's ability to suckle at birth was based on instinct and what many had taken to be excrement was merely blood clots.<sup>228</sup>

The final theory physicians had regarding the nourishment of the fetus until it was ready to be born concerned the passing of blood from the mother to the fetus. While some practitioners held that the blood was obtained in a similar manner as the previously mentioned theories, at least six physicians from this study said that the fetus obtained maternal blood through the navel vein.<sup>229</sup> Sharp brings an interesting point of view to this debate in that she listed several other physicians from the ancient world up to the early modern era such as Pliny, Columella, Fernelius, and Renaldus Columbus, who believed that the fetus did not obtain nutrients from its mother's menstrual blood, as many other physicians did. Their reasoning for this belief was that they argued menstrual blood was impure and caused plants and animals which came into contact with it to wither or run mad.<sup>230</sup>

<sup>227</sup> Culpeper, 1651, 75.

<sup>228</sup> Anonymous, *Aristotle's Compleat and Experienc'd Midwife*, 44-45.

<sup>229</sup> Culpeper, 1651, 75; Chamberlen, 89; Sharp, 141; Barret, 54; Anonymous, *Aristotle's Master-piece Completed*, 12; Anonymous, *Aristotle's Compleat and Experienc'd Midwife*, 38.

<sup>230</sup> Sharp, 1671, 143.

As physicians' understandings about the human body changed during the early modern era, their descriptions about the growth of the fetus and other aspects regarding the fetus in utero adapted to reflect their new understandings. The topic of fetal development experienced the most changes regarding pregnancy during the early modern era. Despite dramatic, medical, scientific, and religious transformations in England, there were very few overall changes to the advice presented on prenatal care and miscarriage between 1500 and 1770.

### **Prenatal Care**

In the early modern era pregnancy was often regarded as the “sickness of nine months” or the “big-belly disease.” As a result, a pregnant woman was instructed to take special care of herself as if she were ill. This care that a woman must have for herself and her unborn child restricted the woman's life in many ways.<sup>231</sup> Jacques Gelis said it best in his book on the history of childbirth:

Being pregnant meant losing one's freedom of body and mind: every gesture, every word spoken, every movement of a pregnant woman also involves the child. She has to live for two. As intermediary between the foetus and the outside world she has to ensure that her offspring is protected from every harmful influence, whatever its source. She has to think, calculate, keep herself under close supervision and constraint.<sup>232</sup>

As soon as a woman believed herself to be pregnant, childbearing manuals presented guidelines which instructed her how best to behave in order to bring the child to term. The guidelines that the manuals instructed expectant mothers to follow were based on the ancient Greek principles of the six “non-naturals.” Non-naturals consisted of air, exercise, sleep, food and drink, excretions, and emotions. If these parts were kept in a proper balance, then the woman

<sup>231</sup> Francois Mauriceau, *The Disease of Women with Child* (London: 1672), 57; Anonymous, *Aristotle's Complete and Experienc'd Midwife*, 28; Dionis, 120.

<sup>232</sup> Gelis, 66.

and fetus within her would both be healthy.<sup>233</sup> While not all the manuals referred to six non-naturals by that name, their advice for the expectant mother was broken down into the various aspects mentioned above that made up the non-naturals.

The part of the non-naturals upon which the authors spent the most time consisted of the proper diet for a pregnant woman. This observation is in marked contrast to Edward Shorter's claim in his book on the history of women's bodies that little care was given to a woman's diet during pregnancy and that, in reality, a woman's diet changed very little during pregnancy.<sup>234</sup> While this may be true for the poorer members of society who could not afford to change their diet, the audience early modern writers addressed in their manuals had the access and ability to purchase specialty foods.

The most important aspect of a pregnant woman's diet was moderation, as eating too much or too little was believed to cause a woman to suffer a miscarriage.<sup>235</sup> When discussing the diet a pregnant woman should follow, the authors often started with what meats were permissible and used terms to describe them such as "of easy concoction," "dry," "wholesome," "of good juice" "nourishing," and "pleasant."<sup>236</sup> While to modern readers these terms are somewhat cryptic, it is helpful that the authors then included a specific list of recommended meats. These consisted of lamb, veal, mutton, turtle, beef, rabbit, river fish, and several types of birds including chicken, partridge, pheasant, lark, and capons.<sup>237</sup> In regards to fruits and vegetables,

<sup>233</sup> Vivian Nutton, "Medicine in Medieval Western Europe, 1000-1500," in *The Western Medical Tradition: 800 BC to AD 1800*, (Cambridge: Cambridge University Press, 1995), 141.

<sup>234</sup> Edward Shorter, *A History of Women's Bodies* (New York: Basic Books Inc., 1982), 51.

<sup>235</sup> Culpeper, 1651, 146.

<sup>236</sup> Culpeper, 1662, 156; William Sermon, *The Ladies Companion* (London:1671), 37-38; Wirsung, 504; Chamberlayne, 55; Anonymous, *The New Aristotle's Masterpiece*, 84; Mauriceau, 58. It is interesting to note however, that Mauriceau believed that "pleasant" meats were better than "wholesome" meats.

<sup>237</sup> Chamberlayne, 55; Wolveridge, 111; Anonymous, *The New Aristotle's Masterpiece*, 84.

the authors recommended quinces, pears, damsons, cherries, sweet apples, and grapes.<sup>238</sup> Not all authors agreed with such instructions regarding the consumption of fruit, however, as Pierre Dionis instructed pregnant women to avoid all fruits.<sup>239</sup> Physicians especially recommended that expectant mothers eat stewed prunes, raisins, and figs in an effort to avoid becoming constipated as the authors asserted that the act of straining when trying to evacuate their bowels was another common cause of miscarriage.<sup>240</sup>

Another aspect of the diet which modern readers might find unusual was what wines were considered appropriate to drink. At this point in time the connection between alcohol and birth defects was not well known. In the seventeenth century Sir Francis Bacon began to advise women not to consume alcohol while pregnant, though it was not until the Gin Epidemic of the first half of the eighteenth century that led to the British government's recognition of the impact of alcohol on pregnancy.<sup>241</sup> Like the meats mentioned above, the authors gave their readers specific types of wine which were considered to be better for both mother and fetus. These included red wine, specifically claret, as it was said to ease digestion; clear wine; and beer, either strong or weak.<sup>242</sup> However, the authors of the medical manuals used in this study only regarded alcohol as dangerous for the fetus if the woman drank immoderately,<sup>243</sup> as it would lead to an imbalance within the mother's body and thus be harmful to the fetus.

The manuals not only included what an expectant mother should eat or drink, but also what foods should be avoided, often mentioning the bad types of meat, fruit, etc. alongside the

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<sup>238</sup> Wirsung, 504; Chamberlayne, 55; Culpeper, 1662, 157.

<sup>239</sup> Dionis, 121.

<sup>240</sup> Sermon, 41; Anonymous, *Aristotle's Compleat and Experienc'd Midwife*, 36. Constipation as a cause of miscarriage was included in nine different manuals ranging from 1651 to 1762.

<sup>241</sup> Fetal Alcohol Spectrum Disorder Center for Excellence, "Curriculum for Addiction Professionals: Level 1," <http://162.99.3.34/educationTraining/courses/CapCurriculum/competency1/historic1.aspx>; accessed May 16, 2018.

<sup>242</sup> Sermon, 39; Culpeper, 1662, 157; Wirsung, 504; Anonymous, *The New Aristotle's Master-piece*, 84.

<sup>243</sup> Anonymous, *The English Midwife*, 31.

good ones. As keeping the body in balance was the most important way to remain healthy, a pregnant woman was instructed to avoid eating foods that would push her body out of balance and thus make her ill. For this reason, Chamberlayne and Sermon both forbade the consumption of meats that were either too hot, too moist, or too cold.<sup>244</sup> As lettuce and other salads were considered to be very cold and moist, they too were forbidden to expectant mothers.<sup>245</sup>

One unusual aspect of food the medical authors argued was harmful for an expectant mother was that of herbs. The herbs that the authors of these medical manuals warned against included cinnamon, pennyroyal, parsley, fennel, saffron, galangal, nutmeg, rue and mustard.<sup>246</sup> If these herbs seem familiar, it is because, as mentioned in the previous chapter, several authors advised women who were struggling with barrenness to use these particular herbs in order to become fruitful. The best explanation for these herbs which were once useful now becoming a danger is in Wirsung's 1598 manual. He noted that herbs such as rue and pennyroyal might provoke a woman's terms, which was important when trying to become pregnant, but would later cause her to lose the pregnancy.<sup>247</sup>

The next non-natural which the authors provided advice for was sleep. Once again the rule to follow was moderation, though for the most part the authors did not specifically suggest an ideal amount of sleep for pregnant women. Most likely this had to do with the fact that each person was considered to have a different humoral balance which would require a different amount of sleep in order to stay healthy. Chamberlayne wrote in 1656 that a pregnant woman should sleep for nine hours at most each night, and should not sleep at all in the afternoon.<sup>248</sup>

Twenty years later Francois Mauriceau advised that a woman get around nine or ten hours of

<sup>244</sup> Chamberlayne, 55; Sermon, 38.

<sup>245</sup> Anonymous, *Aristotle's Compleat Master-piece*, 54.

<sup>246</sup> Wirsung, 504, 509; Culpeper, 1662, 156-157.

<sup>247</sup> Wirsung, 504.

<sup>248</sup> Chamberlayne, 56.

sleep each night, but should sleep no more than twelve hours.<sup>249</sup> Nicolas Culpeper seemed to be the exception to the rule of moderation as he advised that a pregnant woman should be allowed to sleep as much as she wanted.<sup>250</sup> Wolveridge disagreed. He considered such advice extremely dangerous; too much sleep could cause a woman to miscarry.<sup>251</sup> For the most part, the advice regarding how much sleep a woman should get while pregnant did not change over the early modern era.

While these authors sought to ensure that expectant mothers received an appropriate amount of rest, at the same time they emphasized that pregnant women needed sufficient exercise. Many physicians argued that the nobility struggled to have children, or only had weak children, as a result of their sedentary lifestyles.<sup>252</sup> While they wanted the expectant mother to get plenty of exercise, the exercise allowed depended on the stage of the woman's pregnancy. For example, Mauriceau advised that if a woman believed herself to have conceived during intercourse, then she should rest for the next five or six days in order to allow the seed to attach itself to the womb.<sup>253</sup> Nicolas Culpeper argued in his 1662 manual that the mother should exercise more in the final months of the pregnancy as it would dilate her parts and supposedly make for an easier childbirth.<sup>254</sup> Though William Sermon believed mothers should exercise, his instructions went back and forth between little exercise and more exercise every few months. He advised mothers against exercising in the first three months of their pregnancy, but to increase their amount of exercise from the fourth to sixth month. For the seventh and eighth months, however, Sermon warned against exercising as much, but then encouraged the mothers to

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<sup>249</sup> Mauriceau, 61.

<sup>250</sup> Culpeper, 1662, 157.

<sup>251</sup> Sermon, 39.

<sup>252</sup> Gelis, 78; Jennifer Evans and Sara Read, "Before Midnight She had Miscarried": Women, Men, and Miscarriage in Early Modern England," *Journal of Family History* 40, no. 1 (2014): 12.

<sup>253</sup> Mauriceau, 61.

<sup>254</sup> Culpeper, 1662, 157.



exercise harder once again in the final month of pregnancy.<sup>255</sup> Almost forty years later the author of *Aristotle's Compleat Masterpiece* advised that in the first two months of the pregnancy the mother should abstain from all violent movements and exercises, while in the eighth month of the pregnancy she should increase her amount of exercise before slowing down again in the ninth month by avoiding bending, stooping, or lifting any heavy weights.<sup>256</sup> However, the advice offered by authors of manuals was prescriptive. Historians cannot be sure if the guidelines presented in them were actually followed or not. Due to the fact that the manuals were popular in certain societal groups, however, it is safe to assume that expectant women would have taken the advice seriously and that those who could afford to rest in such a manner did.

Because these early modern authors wanted expectant mothers to get the proper amount of exercise, they included permissible and forbidden exercises. Authors stated that exercises such as leaping, dancing, running, horseback riding, carrying heavy things, or even lifting their arms above their heads, were detrimental to the health of the fetus.<sup>257</sup> These activities would be considered dangerous for the same reason that a woman was not supposed to move around a lot immediately after intercourse as early modern authors believed that violent motions could cause the fetus to become dislodged from the womb, resulting in a miscarriage. The exercises which these authors claimed would not cause harm to the fetus included walking gently and using a sedan or litter to travel longer distances.<sup>258</sup> In the first half of the eighteenth century Pierre Dionis advised that a woman should continue doing the amount of work and exercise that she

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<sup>255</sup> Sermon, 39-40.

<sup>256</sup> Anonymous, *Aristotle's Compleat Masterpiece*, 35-36.

<sup>257</sup> Wirsung, 504, 509; Anonymous, *The English Midwife*, 28; Mauriceau, 62.

<sup>258</sup> Mauriceau, 61.

was accustomed to doing before she became pregnant.<sup>259</sup> However, he did not explain his reasoning for this prescription.

According to pregnancy manuals, the most dangerous exercise for an expectant woman was not something that modern readers would consider as exercise: riding in coaches. Six out of thirteen manuals published between 1598 and 1749 mentioned this particular exercise and emphasized its dangers. The first author to advise against riding in coaches was Chamberlayne in 1656, though he only warned against it for the final three months of the pregnancy.<sup>260</sup> When Culpeper discussed riding in coaches he wrote that it was the shaking of the coach which made it dangerous for pregnant women.<sup>261</sup> While most authors of this period only mentioned coaches as dangerous modes of transportation, Mauriceau included wagons, chariots, and horseback riding as well.<sup>262</sup> Only one author explicitly stated that riding in a carriage was permissible, the author of *Aristotle's Compleat and Experienc'd Midwife*, though he was sure to say that the coach rides should be gentle.<sup>263</sup> The concern about riding in carriages seemed to diminish over the early modern era as this warning was mentioned less and less, and was not mentioned again after 1715. One possible reason for this was the additions of springs to carriages in the seventeenth century which would have made riding in one less jarring and thus less dangerous to the fetus.<sup>264</sup>

Many people today, including one historian, assumed that in the early modern era it was frowned upon for a woman to have sexual relations with her husband while pregnant. Petrina Brown wrote in her book that it was believed that having sex with a woman who was pregnant

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<sup>259</sup> Dionis, 124.

<sup>260</sup> Chamberlayne, 56.

<sup>261</sup> Culpeper, 1662, 157.

<sup>262</sup> Mauriceau, 61.

<sup>263</sup> Anonymous, *The English Midwife*, 28.

<sup>264</sup> Mark Kishlansky, *A Monarchy Transformed: Britain 1603-1714* (London: Penguin Books, 1996), 2.

could strangle the fetus in the womb.<sup>265</sup> However, the examination of early modern medical manuals indicated that medical authors regarded intercourse during pregnancy as permissible. Although some authors warned that an immoderate amount of intercourse was dangerous for the fetus,<sup>266</sup> others argued that there were certain points in the pregnancy during which sexual relations were considered to be more dangerous for the fetus, though the authors did not always agree as to when these dangerous times were. Some authors said that women should remain abstinent in the first four months of the pregnancy,<sup>267</sup> while others claimed that it was safe to resume sexual activity after the first two months.<sup>268</sup> Three authors told women to abstain once again in the sixth and eighth months for fear that intercourse could loosen the fetus, but that this fear was no longer present in the seventh and ninth months. William Sermon even claimed that having intercourse during the ninth month was good as it might help bring about labor.<sup>269</sup> The suggestion that intercourse could provoke labor was viewed negatively by other authors who feared it could cause the fetus to be born before it was ready, resulting in a sick or weak child, or would prompt the fetus to turn in the womb to the wrong position for birth. Consequently, most authors advised women to abstain from sexual relations during the last few months of their pregnancies.<sup>270</sup>

As ideas changed regarding human anatomy and how conception occurred, they demonstrated that the concerns previous physicians had were no longer accurate. In his manual Pierre Dionis discussed the various arguments Francois Mauriceau used against sexual relations

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<sup>265</sup> Petrina Brown, *Eve: Sex, Childbirth, and Motherhood Through the Ages* (Chichester: Summersdale Publishers Ltd., 2004), 79. This assumption even appears in historical fiction works, such as *The Other Boleyn Girl* by Philippa Gregory.

<sup>266</sup> Wirsung, 504.

<sup>267</sup> Chamberlayne, 57; Sermon, 41; Anonymous, *Aristotle's Compleat Masterpiece*, 55.

<sup>268</sup> Anonymous, *Aristotle's Compleat and Experienc'd Midwife*, 31.

<sup>269</sup> Sermon, 41. Yet another belief which has lasted through to the present day.

<sup>270</sup> Anonymous, *The English Midwife*, 30; Mauriceau, 63.

at the beginning of the pregnancy. Mauriceau stated that intercourse at that time could result in the seed being damaged or superfetation, where the already pregnant woman could become pregnant with a second fetus. Mauriceau also spoke against intercourse at the end of a pregnancy as it could cause the woman to go into labor before her time. Dionis then provided his own knowledge which contradicted Mauriceau's arguments.

But in answer to these three Objections, I say that the first is imaginary; for he fancies that Generation is the result of the Mixture of both Seeds, and that this Mixture may be prevented and disturb'd by a posterior Emission; which cannot be, seeing the internal Orifice of the Womb is exactly shut, as he himself is forc'd to own. The second is false; because there's no such things as *Superfetation*,...The third can never be; for Husband and wife order things so, that there's nothing to be apprehended from his Agitation or Compression of the Belly, but which he supposes so many Women and Children have been ruined.<sup>271</sup>

Dionis snidely claimed that part of Mauriceau's lack of knowledge in this matter came from the fact that though Mauriceau had been married for forty-six years his wife never had a child, though the manual does not say whether this was due to a lack of conception or the inability to carry a child to term. Dionis then goes on to mention that part of his knowledge in this area came from the fact that his wife had brought twenty children to term. "I am convinced," he wrote, "that Husbands have it not in their power to knock Children on the head, and that therefore they may make love to their Wives as oft as they please."<sup>272</sup> Through Dionis' knowledge of the human body and conception, as well as his own life experiences, he was able to demonstrate that certain beliefs of the past were no longer valid and should be eradicated.

The next of the non-naturals the early modern authors mentioned was that which dealt with the air and environment around the woman who was expecting. Like with many other aspects of the non-naturals, it was important that a woman maintained a balance in the air around her. The best environment for pregnant women was temperate, free from overly hot or cold

<sup>271</sup> Dionis, 124-125.

<sup>272</sup> Dionis, 125.

air.<sup>273</sup> The manuals advised that this air should also be clean, away from foul smelling roads, marshes, rivers, or lakes as foul smells were thought to carry diseases.<sup>274</sup> Most importantly, the woman should avoid residing where there were fogs, mists, or winds from the north or south due to the fact that these could cause a woman to miscarry; the wind carried evil odors and vapors which could cause the mother to contract a disease which could be passed to her child.<sup>275</sup> Prescriptions regarding the best air for a pregnant woman changed very little between 1598 and 1749.

The final non-natural that early modern authors referred to in over half of the manuals concerned a pregnant woman's emotions. For the most part, these authors did not specifically say what were the proper emotions a pregnant woman should feel, but instead warned what emotions she should avoid in order to keep the fetus healthy. The author of the *English Midwife* as well as Robert Barret and James Wolveridge were the only writers who prescribed specific emotions for a pregnant woman, stating that she should remain cheerful and merry,<sup>276</sup> while the remainder of the authors warned against strong emotions. A pregnant woman was advised to not only avoid extreme negative emotions such as fear, anger, or grief, but also extreme positive ones such as joy, laughter, or passion.<sup>277</sup> An expectant mother was to keep herself at peace and not worry about small or troublesome things.<sup>278</sup> To allow herself to become upset was to put the life her fetus in danger, because immoderate emotions could cause a woman to lose the pregnancy, or possibly go into labor too soon.

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<sup>273</sup> Wirsung, 509.

<sup>274</sup> Mauriceau, 58; Anonymous, *Aristotle's Compleat Masterpiece*, 54.

<sup>275</sup> Sermon, 36-37; Chamberlayne, 55.

<sup>276</sup> Wolveridge, 110; Sermon, 42; Anonymous, *The English Midwife*, 28.

<sup>277</sup> Mauriceau, 65. According to eyewitness accounts, Anne Boleyn miscarried a male child after hearing that her husband, King Henry VIII, had been grievously injured in a jousting competition.

<sup>278</sup> Sermon, 42.

Another aspect of emotions that Sermon and other authors wrote about concerned the power of imagination. In the early modern era physicians believed that a woman's imagination could affect her fetus in multiple ways. Peter Chamberlen claimed in his 1665 manual that a woman gave birth to a child covered in hair because the mother had often looked upon a picture of John the Baptist, who was typically clothed in camel's hair.<sup>279</sup> Wolveridge wrote in his manual that a woman gave birth to a black child after she had seen a black man.<sup>280</sup> Finally, the author of *Aristotle's Master-piece* claimed that a hare crossing the path of a pregnant woman caused her child to be born with a harelip.<sup>281</sup> These were not the only examples authors provided, though these three were often repeated in later manuals by other authors as time went on. These examples demonstrated one of the few areas in which women had power concerning their child's destiny as women were typically pushed to the sideline in regards to other aspects of a child's upbringing.

While a woman's imagination was said to cause abnormalities in her unborn child, some authors claimed the woman's imagination also determined the gender and appearance of her infant. Jane Sharp claimed that it was a "strong fancie" of the mother which made her child look like herself, the father, the grandparents, or even a total stranger.<sup>282</sup> The author of the 1702 edition of *Aristotle's Master-piece* even claimed that if a woman imagined her husband's face during extramarital intercourse, she would be able to influence the child to look like her husband. This author then added that the manners, wit, temper, and intelligence of the child were commonly the same as the parents', and not impacted by the mother's imagination.<sup>283</sup> While the vast majority of authors emphasized the influence of the mother's imagination on the fetus, there

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<sup>279</sup> Chamberlen, 95.

<sup>280</sup> Wolveridge, 117-118.

<sup>281</sup> Anonymous, *Aristotle's Master-piece*, 17.

<sup>282</sup> Sharp, 121.

<sup>283</sup> Anonymous, *Aristotle's Master-piece*, 16.

were some authors of the early modern era, such as Ambrose Paré, who argued that this could only happen at the very beginning of the pregnancy before the fetus was properly formed.<sup>284</sup> According to those authors, once the child was perfectly formed, the mother's imagination could no longer influence the child's formation.

Along with the authors' discussions as to the importance of the non-naturals to the expectant woman's health, the authors also discussed other aspects of her life. While it is known that early modern people did not bathe as often as those of the present day, the early modern authors restricted how often expectant mothers were able to bathe even further, though at this time bathing did not involve full immersion into a tub of water. In the early modern era bathing consisted of washing individual body parts with cold water. For the most part only the face and hands would be washed on a regular basis as people were suspicious of washing other parts of the body too much.<sup>285</sup> Mauriceau explained the reasoning for this bathing ban as he asserted a bath could cause the womb to open up before the proper time.<sup>286</sup> At the beginning of the early modern era Christof Wirsung told women they should not bathe until a few days before they believed they would go into labor.<sup>287</sup> Following Mauriceau's logic, bathing shortly before the woman expected to go into labor would help to open the womb and thus make the delivery easier for her.

As time went on authors began to add special ingredients for the baths and steps to take afterwards to help prevent the development of wrinkles on their bellies, likely referring to what are today called stretch marks. An example of this instructed the mother to bathe in "sweet water" with emollient herbs. After the bath the woman was to anoint her belly with rose and

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<sup>284</sup> Gelis, 54.

<sup>285</sup> Sara Read, *Maids, Wives and Widows: Exploring Early Modern Women's Lives 1540-1740* (South Yorkshire: Pen and Sword History, 2015), 66.

<sup>286</sup> Mauriceau, 66.

<sup>287</sup> Wirsung, 504.

violet oil and her genitals with lily oil or bird fat. It was also recommended that approximately two weeks before labor she should bathe twice a day with muscadine and lavender water.<sup>288</sup>

While there were not many changes to these instructions over the entirety of the early modern era, the changes that did occur demonstrated that authors discovered how to turn what they believed to be a problem into something positive. Because they thought a bath would open up the womb, they advised women not to bathe until such a time as the opening of the womb would help the process of childbirth. Anything which might make childbirth easier was likely welcomed by expectant women as anywhere between seven and sixteen women out of a thousand would die in childbirth during the early modern era.<sup>289</sup>

As the clothing for women in early modern England was especially restrictive, authors during this time included advice in their manuals regarding how a woman must alter her dress while pregnant. As soon as the woman believed herself to be pregnant, she was instructed to no longer lace her corset as tight as she had done so previously.<sup>290</sup> Then, once her breasts and belly began to grow larger, the manuals instructed the woman to lay aside her stiff corset and to instead use a quilted bodice to shape and support her body as the stiff corsets could prevent the fetus from growing properly.<sup>291</sup> As the belly grew larger the woman was then instructed to use a swathing band to support the belly during the final months of pregnancy.<sup>292</sup> Jacques Gelis argued a band offered support for the growing belly of the pregnant woman and helped to prevent urinary tract infections. If the belly was not supported, it could press down on the bladder and

<sup>288</sup> Anonymous, *Aristotle's Compleat and Experienc'd Midwife*, 36.

<sup>289</sup> Robert Schofield, "Did Mothers Really Die? Three Centuries of Maternal Mortality in 'The World We Have Lost'" in *The World We Have Gained: Histories of Population and Social Structure* (Oxford: Bail Blackwell Ltd., 1986) 248.

<sup>290</sup> Mauriceau, 66.

<sup>291</sup> Dionis, 123.

<sup>292</sup> Chamberlayne, 58.



restrict the flow of urine, causing an infection which could then endanger the fetus.<sup>293</sup> As the pregnancy progressed into its final months, a woman was considered to be in greater danger of tripping and falling as she could not always see her feet. Because of this Dionis advised the expectant mother to only wear shoes with a low heel.<sup>294</sup> While early modern fashions evolved a great deal, for the most part a woman's basic undergarments did not, and as such the advice presented in the manuals did not greatly change either.

Along with these instructions as to what expectant mothers were supposed to do to take care of themselves and their fetus, early modern authors provided a list of specific things for pregnant women to avoid in order to protect themselves. For example, medical writers assumed that foul smells carried disease and therefore advised pregnant women to avoid foul stenches, such as a candle being put out,<sup>295</sup> as the contraction of a disease could cause the loss of the pregnancy. One manual warned against any strong smell, good or bad, though the author did not explain why good smells were also considered dangerous.<sup>296</sup> Other common things to be avoided included loud noises like the firing of guns or the ringing of bells.<sup>297</sup> While no explanation was provided as to why these noises were to be avoided, it is possible that the authors assumed loud noises would surprise the woman, cause birth defects, or prompt a potential miscarriage.

Like today, when a pregnant woman became ill there were specific medicines and treatments physicians considered harmful and argued must be avoided. One of the most common treatments for illness was the practice of bloodletting. A physician would open a vein either on the arm or leg of the patient and drain out a specific amount of blood in hopes of rebalancing the patient's humors. Like many other aspects of prenatal care, there was not a great amount of

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<sup>293</sup> Gelis, 80.

<sup>294</sup> Dionis, 123.

<sup>295</sup> Mauriceau, 58.

<sup>296</sup> Anonymous, *Aristotle's Master-piece*, 156.

<sup>297</sup> Chamberlayne, 57.

change from the beginning of the period to the end, and the practice of bloodletting continued past the early modern era. Culpeper advised in 1662 that bloodletting should be allowed only if the mother had a fever, and only a small amount of blood. He also prescribed the mother to be bled in either the fourth or fifth month of the pregnancy to prevent a build-up of too much blood.<sup>298</sup> A decade later William Sermon forbade a woman to be bled unless absolutely necessary, though he did not elaborate further on when that might be.<sup>299</sup> Two authors writing within a decade of one another wrote that the mother should not be bled during the first four months of the pregnancy because the fetus was more easily destroyed prior to the fifth month.<sup>300</sup> The last author to mention bloodletting as part of prenatal care was Pierre Dionis. He stated that the mother may be bled halfway through the fourth month and during the seventh and ninth month. He also prescribed bloodletting if the mother continued to menstruate during her pregnancy as that indicated too much blood was going to the fetus which could possibly cause the woman to miscarry.<sup>301</sup> Though bloodletting remained a standard medical practice until the nineteenth century, physicians did not agree on its use and frequency during pregnancy.

The second popular treatment discussed in the manuals concerned purges, which were designed to cleanse the body through the use of clysters and emetics. While most authors still endorsed the use of purgatives during pregnancy, they recommended pregnant women use different ingredients. While some authors told their readers that they were allowed to use ingredients such as rhubarb, sena, chicorie, manna, cream of tartar, agaric, and cassia, others stated what ingredients should not be used such as aloes, scammon, turbith, and coloquindia.<sup>302</sup>

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<sup>298</sup> Culpeper, 1662, 159.

<sup>299</sup> Sermon, 42.

<sup>300</sup> Wolveridge, 111; Anonymous, *The English Midwife*, 31.

<sup>301</sup> Dionis, 121-122.

<sup>302</sup> Culpeper, 1662, 160; Sermon, 42; Mauriceau, 67. Anonymous, *Aristotle's Compleat and Experienc'd Midwife*, 33.

Generally, physicians recommended that if a woman wanted to use a purgative, she should use a gentle one. Some manuals recommended that purgatives only be used between the fourth and sixth or seventh month of the pregnancy; before and after these times it was thought that the ligaments connecting the child to the womb were weak and could be broken.<sup>303</sup> By 1719, it seemed that purgatives were beginning to fall out of fashion. Pierre Dionis believed them to not be safe and advised their use only when absolutely necessary.<sup>304</sup> Dionis was not the only person to hold this belief. Many physicians wrote that the use of strong clysters and purgatives during pregnancy could dislodge the fetus from the womb and push it out along with the waste.<sup>305</sup> Because an expectant mother worried she may cause harm to her unborn fetus, it is likely that she would follow the advice of the manuals and use them only when she believed them to be absolutely necessary.

Along with the general treatments listed above, early pregnancy manuals addressed two problems women faced as a direct result of their pregnancies. The first of these two problems was nausea and morning sickness, though the term “morning sickness” was not used at this time. Today the cause of nausea in the first trimester of pregnancy is attributed to the increase of hormone levels, but as hormones were not discovered until the beginning of the twentieth century, early modern physicians had a different theory. According to one early modern notion, the growing fetus was nourished by pure blood from the mother. This left the impure blood to remain in the stomach and caused the woman to become nauseous.<sup>306</sup> By the fourth month of the

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<sup>303</sup> Anonymous, *Aristotle's Master-piece*, 158-159.

<sup>304</sup> Dionis, 122.

<sup>305</sup> Gelis, 81.

<sup>306</sup> Culpeper, 1662, 162.

pregnancy, the child was said to have grown enough that it required more blood, leaving less in the stomach which made the nausea go away.<sup>307</sup>

Another theory in the seventeenth century referred to by Francois Mauriceau argued that nausea was caused by the sympathy between the stomach and the womb. His evidence to support this theory was that some women supposedly experienced nausea immediately after conception before there had been a chance for unused menstrual blood to build up.<sup>308</sup> The author of *The English Midwife* agreed with Mauriceau and elaborated further on his theory regarding the sympathy between the stomach and the womb. He stated that as the womb began to grow, it sensed pain which was then transferred to the stomach. As the womb grew accustomed to growing by the third or fourth month, it stopped sending pain signals to the stomach, and thus the nausea ended.<sup>309</sup> Almost forty years later Pierre Dionis also believed there was sympathy between the womb and the stomach, but that nausea stemmed from an overabundance of humors.<sup>310</sup> The theory changed yet again in 1762 when William Smellie wrote that the vomiting in the first few months of pregnancy unloaded the stomach of superfluous nourishment.<sup>311</sup> The inability to truly understand what caused a woman to experience nausea during the first trimesters of pregnancy led to numerous new theories over the early modern era.

Along with describing what caused nausea, the pregnancy manuals prescribed various nausea treatments. The earliest manual to discuss the treatment of nausea provided a list of various plants and herbs, including roses, bettony, quinces, aromaticum, pearl, and green ginger,

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<sup>307</sup> Sermon, 50-51. All the theories listed above differ from that in *The Trotula*, which argued that it was the motion of the child during the fourth month which caused a woman to become nauseous. Why these changes occurred is unknown. Monica H. Green, ed., *The Trotula: A Medieval Compendium of Women's Medicine*, (Philadelphia: University of Pennsylvania Press, 2001), 107.

<sup>308</sup> Mauriceau, 68-69.

<sup>309</sup> Anonymous, *The English Midwife*, 201-202.

<sup>310</sup> Dionis, 122. Dionis also believed that women who vomited a lot while pregnant would be healthier after giving birth than those who had not.

<sup>311</sup> Smellie, 144.

to blend into an electuary which were said to strengthen the stomach.<sup>312</sup> Herbal remedies were included in two other manuals published in the seventeenth century. Other manuals at this time prescribed various foods, such as citron sauces and juicy meats, that should be able to help the woman overcome the nausea. Others manuals advised the woman to eat small portions throughout the day and to exercise moderately in the open air.<sup>313</sup> As there were a variety of theories as to what caused prenatal nausea, so were there numerous theories as to what could be done to treat this nausea.

The second problem that several of the pregnancy manuals mentioned was that of the woman's breasts swelling too much and causing extreme discomfort. According to early modern physicians, if the breasts grew too large, the milk inside of them would curdle, making it unfit for the child's consumption once born.<sup>314</sup> Unlike some of what we would regard as more realistic treatments for nausea, those prescribed for painful, swollen breasts were not. The main advice provided to the expectant mothers was to wear a necklace of gold, though if the woman could not afford gold, steel would work as well.<sup>315</sup> The other treatment for this problem included a concoction of various herbs with which the woman was to anoint her breasts.<sup>316</sup> Unfortunately, authors who mentioned this problem and provided treatment for it did not explain how the treatments were supposed to help, probably because they expected their readers already understood how such treatments worked.

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<sup>312</sup> Culpeper, 1662, 162. Today ginger has been proven to relax gastrointestinal muscles, helping to ease nausea. Anahad O'Connor, "The Claim: Ginger Can Help Reduce Morning Sickness," *The New York Times*, April 25, 2011, <https://www.nytimes.com/2011/04/26/health/26really.html>. Accessed May 19, 2018.

<sup>313</sup> Smellie, 145.

<sup>314</sup> Chamberlayne, 57.

<sup>315</sup> Sermon, 44.

<sup>316</sup> Anonymous, *Aristotle's Compleat Masterpiece*, 55.

As the woman made it through the first few months of her pregnancy, she began to look forward to the arrival of her new son or daughter. In a time when the birth of a male child meant the family name and property was no longer in danger of falling out of the family, knowing the gender of their fetus before birth was extremely important for both expectant mothers and fathers. Following Galenic principles regarding the amount of heat available on different sides of the body, many physicians claimed a woman could tell whether the fetus she was carrying was a boy or a girl. While many of the authors of these manuals purported a woman could tell by the signs mentioned below, there were several authors over the early modern era who were more cautious regarding this ability, or outright denied it was possible. The earliest author during the early modern era to express doubt was Christof Wirsung in 1598, when he stated that, “Albeit there be divers signes, whether a woman be conceived of a boy or a girle; yet are they not so sure that one may stedfastly beleeeve them.”<sup>317</sup> He even went on to claim that according to the symptoms presented, a woman might believe she was having boy, but would then be delivered of a girl. In the seventeenth century authors such as Peter Chamberlen and John Shirley stated that it was hard to judge the gender of the fetus,<sup>318</sup> while others such as the anonymous author of *The English Midwife* and the author who went by the pseudonym of Physician stated that it was impossible to know the gender of the child before it was born.<sup>319</sup>

Due to the Galenic assumption that the right side of the body contained more heat, it was believed that a male fetus was conceived on the right side of the womb. Symptoms exhibited on the right side of the body were thus said to indicate that the fetus being carried was a boy. Some of these symptoms included the belly being bigger on the right side, the fetus first being felt on the right side, the woman’s right breast being harder and more plump, and the right eye being

<sup>317</sup> Wirsung, 503.

<sup>318</sup> Chamberlen, 73; John Shirley, *A Short Compendium of Chirurgery* (London: 1678), 101.

<sup>319</sup> *The English Midwife*, 14; Physician, *The Ladies Physical Directory* (London: 1727), 78.

brighter and sparkling.<sup>320</sup> Symptoms on the right side did not just refer to changes within the body, but to a woman's actions as well. Some of these included the use of the right hand to support herself when standing, taking her first step with her right leg, or reaching out with her right hand to grab something.<sup>321</sup> Conversely, physicians encouraged a woman observing these symptoms on the left side of the body to believe that she carried a girl.<sup>322</sup>

Another possible symptom a woman might experience which indicated that she carried a male fetus was that she would feel the fetus move around the sixtieth day following conception, whereas if the fetus were female, she would not feel it move until the ninetieth day.<sup>323</sup> According to some authors the woman's physical and emotional health was tied to the gender of the fetus, with John Shirley and others writing that a woman who carried a male fetus would be healthier than if she carried a female fetus.<sup>324</sup> Two authors wrote that a woman carrying a female fetus was more melancholy or peevish, while a woman pregnant with a male experienced less sadness during her pregnancy.<sup>325</sup> This could possibly be the result of a placebo effect on the mother; the belief that she was carrying a boy could promote happiness, which could then subconsciously result in better overall health for the mother.

Along with bodily symptoms, the authors recommended several tests that a woman could perform in order to determine whether she was having a boy or a girl. These tests typically involved the use of the mother's milk and its consistency when dropped into or onto various substances. Christof Wirsung wrote in 1598 that when a bit of the mother's milk was dropped into a pot of urine, if the fetus she carried was male, the drop would swim on the top of the

<sup>320</sup> Sermon, 26-27. *The Trotula* also purported that if the right breast was larger the woman was carrying a male fetus and if the left breast was larger, a female fetus. Green, *The Trotula*, 105.

<sup>321</sup> Sharp, 105; Sermon, 27.

<sup>322</sup> Anonymous, *Aristoteles Master-piece, or, The Secrets of Generation*, (London: 1684) 122.

<sup>323</sup> Chamberlayne, 73-74.

<sup>324</sup> Shirley, 101.

<sup>325</sup> Sermon, 28; Anonymous, *Aristoteles Master-piece, or, The Secrets of Generation*, 122.

urine.<sup>326</sup> This particular test was problematic: later authors declared that in this same test the milk would sink to the bottom if the fetus was male.<sup>327</sup> Another test required a bit of milk to be dropped onto a pane of glass; if it spread out, then the fetus was a girl, whereas if it stayed in place, it was a boy.<sup>328</sup> Although the authors never explained why breast milk was considered to be a reliable test of gender, one can suppose that it was based on the theory that the gender of the fetus affected the constitution of the milk, which would change its properties and result in the different outcomes of these various tests.

Along with wanting to know the gender of her fetus, a woman would want to know if she was carrying more than one fetus as that meant that extra preparations would need to be made in regards to swaddling material and other supplies. Similar to the practice of guessing the child's gender, however, using physical signs to determine whether or not a woman was carrying more than one baby was not always reliable. The most common sign which indicated that a woman was carrying twins was that in the third or fourth month following conception the woman would feel strong movements on both sides of the belly.<sup>329</sup> Another theory stated that the larger size of the woman's belly demonstrated that she was carrying more than one fetus.<sup>330</sup> As the early modern era progressed, fewer authors discussed how to tell whether or not a woman was carrying multiple babies. William Smellie discounted all these theories; he believed that some single births showed similar symptoms to those mentioned above. To him, the only sure way to determine that a woman was carrying more than one fetus was after she had given birth. If a child was followed by a placenta, then the woman was not carrying anymore babies, but if

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<sup>326</sup> Wirsung, 503. *The Trotula* included a similar test, however it featured the squeezing of several drops of blood or milk into water. According to *The Trotula*, if the substance fell to the bottom the woman was carrying a boy and if it floated, a girl. Green, *The Trotula*, 105.

<sup>327</sup> Chamberlayne, 73; Anonymous, *Aristoteles Master-piece, or, The Secrets of Generation*, 122.

<sup>328</sup> Raynalde, 142.

<sup>329</sup> Chamberlayne, 74.

<sup>330</sup> Sermon, 30.



another baby followed, then obviously she had been carrying more than one child.<sup>331</sup> As Smellie was one of the last authors writing on this subject during the early modern era, his comment demonstrated that, like various theories regarding the sex of the fetus, there was no way of knowing until the child was born.

### **The Fear of Miscarriage**

For many women, both in the past and in the present, miscarriage remains one of the greatest fears faced during the nine months of pregnancy. To lose a pregnancy in the early modern era meant that there was one less person to carry on the family name or inherit the family property in the event of the parents' death or one less child to help with the family business or farm, not to mention the emotional blow it dealt the parents. However, frequent miscarriage was an unfortunate part of life in the early modern era.<sup>332</sup> Raymond A. Anselment has argued that the threat of miscarriage was greater, or more common, than that of a maternal death in pregnancy. The loss of the fetus was not the only aspect of miscarriage which worried mothers during their pregnancy, but that the miscarriage could impact the mother's future reproductive health as well as her life.<sup>333</sup>

Although physicians were closer to understanding how a fetus developed and grew in the womb as the early modern era progressed, physicians' opinions as to what caused miscarriages and how to avoid them did not vary greatly over the sixteenth, seventeenth, and eighteenth centuries. This is not surprising given that even today doctors struggle to understand what causes a woman to lose the fetus she is carrying. Thus, as Michael Eshleman argued, "the possibility of

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<sup>331</sup> Smellie, 369-370.

<sup>332</sup> Out of her eighteen pregnancies Queen Anne (1665-1714) suffered eight miscarriages.

<sup>333</sup> Evans and Read, 3.

miscarriage appeared to influence nearly every facet of prenatal care.”<sup>334</sup> The instructions provided in the pregnancy manuals warned against certain foods, smells, sights, and actions for fear of causing a miscarriage. Although the physicians of the early modern era could not be sure as to what caused miscarriages, they offered their views on this question and advice as to how to prevent it.

Early modern physicians had different terms for miscarriage depending on when it occurred during the pregnancy. Francois Mauriceau stated that if a woman lost the pregnancy before a solid substance had formed, it was called an “effluxion.” If a woman lost the fetus between the second and seventh month of the pregnancy, it was called an “abortion.” Finally, if a woman miscarried between the seventh and ninth month, then it was still called a birth even though the child did not survive.<sup>335</sup> Ninety years later William Smellie used similar terms though he referred to slightly different times in the pregnancy. The term “efflux” was used if the pregnancy was lost before the tenth day, “expulsion” was used in the time between the tenth day and third month, “abortion” between the third and seventh month, and “miscarriage” from the seventh month to term.<sup>336</sup> However, no matter what term was used, the loss of pregnancy was likely devastating to a woman in early modern England as it meant that there was one less child to inherit the family and property, or in the case of the nobility or royalty, the family’s title and position.

As in the modern day, physicians argued that there were specific times in the pregnancy at which a woman was more likely to have a miscarriage. Starting with the earliest author to discuss the loss of a pregnancy, Cristoph Wirsung argued in 1598 that although a woman may lose the child at any point during her pregnancy, the most dangerous times are those before the

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<sup>334</sup> Evans and Read, 4.

<sup>335</sup> Mauriceau, 129.

<sup>336</sup> Smellie, 125-126.

fourth month and after the seventh month.<sup>337</sup> Fifty-three years later, Nicolas Culpeper argued that the most dangerous time for the pregnancy was in the first two months because the fetus was presumably still forming and could more easily slip out of the womb. Like Wirsung, Culpeper argued that the latter months of the pregnancy were also dangerous; towards the end of the pregnancy the womb was so full that it could not fully close, which could cause the child to push its way out before it was ready to be born.<sup>338</sup> The anonymous author of *Aristotle's Last Legacy* agreed with Culpeper, arguing that the ligaments of the womb were weak and easily broken towards the end of the pregnancy.<sup>339</sup>

Although a woman would likely look for the signs of a miscarriage more closely during the parts of her pregnancy her manual labelled most dangerous, the signs provided by the authors of these medical manuals could be exhibited at any time of the pregnancy. One unusual aspect of Culpeper's manual was his statement that the signs of miscarriage were known by every woman with child, so it was needless to rehearse them.<sup>340</sup> Having said this, Culpeper did go on to list various indications that the fetus within a woman's womb was dead. By saying that these signs need not be mentioned because they were so well known, then mentioning them nonetheless, Culpeper's manual suggests that these beliefs were either not as well-known as he may have assumed or that Culpeper wanted to show off his knowledge on the subject.

The most common symptom mentioned in the pregnancy manuals was that the woman's breasts, which had previously been swollen, suddenly became lank. Several authors such as William Sermon expounded further upon this by stating that if the woman was carrying twins, then the falling of the right breast meant she lost a male child, while the falling of the left breast

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<sup>337</sup> Wirsung, 508.

<sup>338</sup> Culpeper, 1651, 142.

<sup>339</sup> Anonymous, *Aristotle's Last Legacy*, (London: 1749), 42.

<sup>340</sup> Culpeper, 1651, 143.

meant she had lost a female child. The reason for why this sign indicated a loss of the pregnancy according to Sermon was that it demonstrated the fetus loathed its nourishment and thus did not take in what it needed to survive.<sup>341</sup> Another symptom the early modern authors included in their manuals which indicated a woman had lost her child is still used in the world of modern medicine: the presence of a large amount of bleeding from the womb. Bleeding could be caused by a corruption or weakness of the womb which rejected the presence of an unhealthy fetus.<sup>342</sup>

Although the shrinking of the breasts and the presence of heavy bleeding were the most common signs of miscarriage, James Wolveridge gave further signs that an expectant mother should be concerned about, including stinking breath, her belly growing soft, and inability to feel the child move within her.<sup>343</sup> As early modern physicians purported that a pathway ran from a woman's privies to her mouth which allowed her to smell and taste the humors in her reproductive organs, the smell or taste of something rotting was a sign that the fetus within her had died. While the theory concerning taste and smell was no longer considered valid, even today the lack of movement from a baby in utero is a cause of concern for expectant mothers who fear their fetus may have died.

As with any medical tragedy, physicians tried to understand what might have caused a woman to lose her child. By doing so, they hoped to provide advice to help prevent it from happening to another woman. The variety of causes for miscarriage that physicians provided were similar in number and scope to those which physicians said caused a woman to be unable to conceive. The most general cause the authors presented was that the woman's womb was either too weak or too corrupted to carry a fetus to term. Several authors broke this down even further by providing specific examples as to what they meant. Two authors from the seventeenth century

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<sup>341</sup> Sermon, 84.

<sup>342</sup> Barret, 65.

<sup>343</sup> Wolveridge, 108-109.

referred to the humoral belief that if the womb was too wet then the fetus would slip out.<sup>344</sup> The anonymous author of *The New Aristotle's Masterpiece* stated that the inability of the womb to create the necessary membranes which enclosed the child, or the amniotic sac, or the spontaneous separation of those membranes from the womb were known causes of miscarriage.<sup>345</sup> Twelve years later William Smellie also contributed the separation of the placenta from the womb as one of the main causes of miscarriage.<sup>346</sup>

Along with the various ways an unhealthy womb could influence a woman's pregnancy, the overall health of the mother could have a negative effect on her unborn child. Over the early modern era physicians raised concerns about maternal weight, how much she ate, her bowel movements, and how often she was ill. While some of these concerns were published in manuals over just one century, others were included throughout the early modern era. One supposed cause for a miscarriage concerned the weight of the expectant mother. According to Cristoph Wirsung, Nicolas Culpeper, and Robert Barret, a miscarriage could be caused by a woman being either too thin or too fat.<sup>347</sup> In Culpeper's manual, this belief was tied to the idea that overeating or not eating enough could also provoke a miscarriage.<sup>348</sup> Wirsung and Barret, however, made no mention of the woman's diet when discussing miscarriage. Culpeper was not the only author to tie the amount of food a woman ate to the possibility of losing her pregnancy. Although authors who referred to overeating did not explain why this could harm the pregnancy, it was likely tied to early modern views on obesity's negative impact on a woman's fertility. According to historian Sarah Toulalan, "fat bodies" were understood to be problematic reproductively because the majority of the nourishment and blood that were supposed to go to the fetus instead went to

<sup>344</sup> Culpeper, 1651, 145; Wolveridge, 105.

<sup>345</sup> Anonymous, *The New Aristotle's Masterpiece*, 81.

<sup>346</sup> Smellie, 170.

<sup>347</sup> Wirsung, 509; Culpeper, 1651, 146; Barret, 65.

<sup>348</sup> Culpeper, 1651, 146.

the production of fat, putting the fetus in danger of starving.<sup>349</sup> Yet authors also argued that undereating did not provide enough nourishment for the child and weakened the mother.<sup>350</sup>

While the notion that a woman's weight could cause a miscarriage was only discussed between 1598 and 1699, the significance placed on how much she ate lasted into the eighteenth century.

Excessive vomiting was also presumed to cause a woman to lose her pregnancy. While some vomiting was to be expected as a result of the nausea which usually accompanied the first few months of pregnancy, these authors acknowledged that a continuation of vomiting throughout the pregnancy or the inability to eat without vomiting was a common concern. As such, several physicians who mentioned vomiting as a reason for a miscarriage provided anti-nausea treatments. The anonymous author of *The English Midwife* instructed the expectant mother to place a plaster with mastick on her stomach every day along with drinking a cordial made with various herbal ingredients every morning.<sup>351</sup> The 1702 edition of *Aristotle's Master-piece* provided a recipe for an herbal unguent which the woman would then apply to her stomach.<sup>352</sup> While each of these treatments included several different types of materia medica, the two most common amongst these recipes were mastick and aloe.<sup>353</sup> As the use of botanical materia medica began to lose favor with some physicians in the eighteenth century, the authors provided new advice for expectant mothers struggling to keep their food down. According to the French physician Pierre Dionis, the main danger that continual vomiting presented was not the act of vomiting itself, but the strain that it put on the body, especially when the stomach was

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<sup>349</sup> Sarah Toulalan, "'To[o] Much Eating Stifles the Child': Fat Bodies and Reproduction in Early Modern England," *Historical Research* 87, no. 235 (2014) 69-70. Unfortunately, according to Toulalan, the lack of specific terms of measurement makes it impossible to quantify and understand what these early modern authors meant as too fat.

<sup>350</sup> Wolveridge, 105.

<sup>351</sup> Anonymous, *The English Midwife*, 32.

<sup>352</sup> Anonymous, *Aristotle's Master-piece*, 157.

<sup>353</sup> Both of these herbs were mentioned in the previous chapter for their inclusion in treatments for barrenness.

already empty. Dionis did not provide any herbal remedies for his patients, but instead advised his readers to look for specific foods which would not make the expectant mother nauseated.<sup>354</sup> Dionis claimed that the mother would not only be relieved from continuous vomiting, but would be able to provide the nutrients her fetus needed.

Another strain upon the woman's body which physicians believed could cause harm to the unborn child was that caused by constipation, which might result in a woman pushing too hard when trying to relieve herself. In doing this, the woman might strain and damage the ligaments holding the fetus in the womb. In a manner similar to the problem of nausea and vomiting, the authors of medical manuals provided various treatments not only to help the problem, but to prevent it as well. James Wolveridge and the author of *The English Midwife* advised expectant mothers to eat spinach or other greens, while William Sermon advised the mothers to eat greens as well as prunes and stewed apples.<sup>355</sup> Besides eating foods that were supposed to help "loosen" the body, authors prescribed certain medicines in various forms. Robert Barret advised expectant mothers to drink a laxative electuary made with cremor tartari, or cream of tartar.<sup>356</sup> Three years later the author of *Aristotle's Master-piece* prescribed a clyster, or enema, made from a decoction of mallows, violets, sugar, and oil. Additionally, the author advised expectant mothers to eat a broth made with borage, bugloss, beets, mallows, and manna.<sup>357</sup> Even in the latter part of the eighteenth century William Smellie told his readers to use an emollient clyster to relieve constipation.<sup>358</sup> Over the course of the early modern era the practices used to treat constipation in an attempt to prevent a woman from suffering a

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<sup>354</sup> Dionis, 127.

<sup>355</sup> Wolveridge, 112; Anonymous, *The English Midwife*, 31; Sermon, 41.

<sup>356</sup> Barret, 67.

<sup>357</sup> Anonymous, *Aristotle's Master-piece*, 156.

<sup>358</sup> Smellie, 174.

miscarriage adjusted from the use of particular foods to methods more reliant on medical treatments.

An expectant mother was also warned to avoid injuries at all costs for fear that physical trauma to the body could damage the womb and thus the fetus inside of it.<sup>359</sup> Fear of injury was common. At least ten out of the seventeen manuals which addressed miscarriage from the period between 1598 and 1762 contained this warning. Early modern anatomists believed that the womb was connected to the body by thin ligaments which could be easily broken by a fall or a blow to the stomach. According to Charles Gabriel Le Clerc's manual published in 1701, a fall to the knees was especially dangerous as the ligaments connected to the knees were also connected to the womb.<sup>360</sup> Authors also warned expectant mothers against being hit in the belly, straining or over-stretching their muscles, or any other violent motion.<sup>361</sup>

As the possibility of miscarriage was commonly known, many authors provided preventative measures that a woman could take both before and after conceiving to increase her chances of successfully carrying the child to term. Similar to how women in the present take prenatal vitamins while trying to conceive, women in the early modern era were given advice as to how to prepare and strengthen their bodies in preparation for pregnancy. The first step was to strengthen their bodies and most especially their womb by drinking wine with mother of thyme boiled in it as well as other medicines described in the previous chapter to treat barrenness.<sup>362</sup> Along with strengthening her body, the woman who hoped to conceive was instructed to rid her womb of windiness, moistness, dryness, or any other problems they believed their wombs had through a variety of methods. Some of these included eating juniper berries, sweating in a hot

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<sup>359</sup> Mauriceau, 131.

<sup>360</sup> Charles Gabriel Le Clerc, *The Compleat Surgeon* (London: 1701), 83.

<sup>361</sup> Culpeper, 1651, 146; Smellie, 170.

<sup>362</sup> Culpeper, 1651, 147.



house, taking herbs to either dry or moisten the womb, or using baths, unguents, ointments, or fumes to dilate the womb.<sup>363</sup> By taking these prescribed steps, early modern women were encouraged to believe that they had the ability to prevent a miscarriage by making their body a hospitable place for a fetus to grow.

Once a woman believed herself to be pregnant she would want to find further ways to help prevent a miscarriage from happening. One step a woman could take was to drink ale with boiled sage every morning.<sup>364</sup> She could also make a poultice from chamomile flowers, white bread crumbs, mastick, cloves, rose vinegar, and maligo wine and lay it on her pubic area to help strengthen the fetus in the womb.<sup>365</sup> Another recipe provided by the manuals to strengthen the fetus was for a plaster applied the back made of galangale, nutmeg, mastick, dragon's blood, and several other substances.<sup>366</sup> If the fetus in utero could be kept strong and healthy, then physicians claimed that it was less likely to die in the womb or be born before its time.

If a woman was to experience any event or symptom which she feared might lead to a miscarriage, the pregnancy manuals offered advice as to how she might still prevent a miscarriage. The more popular treatments included the consumption of various materia medica and instructions as to how the woman was supposed to behave. Culpeper instructed the expectant mother to take garden tansy and to carry something known as a "stone with child" or "eagle stone" around her neck. An eagle stone was a stone which contained little stones inside of it that rattled when it was shaken and had been used as a talisman in pregnancy for some time.<sup>367</sup> While other authors around the same time prescribed various other botanicals such as plantain, coriander, frankincense, dragon's blood, and myrtles, at the close of the seventeenth century

<sup>363</sup> Culpeper, 1651, 147-148; Sharp, 224.

<sup>364</sup> Culpeper, 1651, 149.

<sup>365</sup> Sharp, 226.

<sup>366</sup> Anonymous, *Aristotle's Master-piece*, 159.

<sup>367</sup> Culpeper, 1651, 149-152.

another remedy came into popularity. In the 1660s, the English physician Thomas Sydenham created a tincture containing the newly acquired opium from China which he called laudanum. Thirty years later Robert Barret prescribed laudanum to women as a way to stop a miscarriage. This addictive drug was not to be taken only once, but often, as Barret claimed it provided sleep and removed disturbances from the body.<sup>368</sup> Although he was the first to do so, Barret was not the only author to prescribe laudanum, as the author of *Aristotle's Master-piece* had done so to help women who were experiencing excessive vomiting.<sup>369</sup>

Another way in which a woman could possibly stop a miscarriage was to immediately take to her bed and rest. Here again physicians prescribed opiates to help the pregnant woman get the rest she needed as well as to quiet her mind.<sup>370</sup> The author who went by the pseudonym Physician told his readers that after receiving a fright, injury, or anything else which might lead to a miscarriage, a woman was to immediately drink a glass or two of French claret, as it was said to strengthen the womb, followed by a prescribed electuary three times a day and bed rest until the danger of miscarrying had passed.<sup>371</sup> Unfortunately, like in several other occasions throughout the manuals, Physician did not tell his readers how long this period was, and so modern readers can only guess. No matter what treatment early modern authors recommended, their goal was to help the pregnant woman carry her fetus to term.

One other theory discussed in the sections on miscarriage was how the child's birthdate affected its likelihood of survival. According to several authors, babies born in the seventh month of the pregnancy were more likely to live than those born in the eighth month of the pregnancy. The reasoning behind this theory was if the fetus was strong enough during the

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<sup>368</sup> Barret, 73-74.

<sup>369</sup> Anonymous, *Aristotle's Master-piece*, 157.

<sup>370</sup> Smellie, 174-175.

<sup>371</sup> Physician, 70.

seventh month it would be born. If the child was not strong enough, then it moved from one side of the womb to the other. This movement weakened the child and if it was born in the eighth month before having the chance to recover its strength, then the child would not live long after birth.<sup>372</sup> In discussing this matter a minority of authors claimed that the influence of the stars and planets played a part. James Wolveridge stated that the influence of the stars “every seventh moneth produceth a dangerous and hurtful motion to the infant; for the Sun is ever standing in an opposite sign at that time, and because the 8th. moneth is ever nearest unto *Saturn*, and enemie to all that receive life.”<sup>373</sup> As the centuries passed and medical ideas advanced, one author in 1681 mentioned this theory, but only so s/he could discredit it by stating it was the muscles of the womb which expelled the child from the mother, thus the fetus did not need the amount of strength prior authors claimed.<sup>374</sup> The practice of basing medical knowledge on eyewitness observation as the Scientific Revolution made popular further discredited this theory as experience proved that the older the child was at birth, the more likely it was to survive.<sup>375</sup>

### **Conclusion**

Although scientific understanding of the body changed greatly over the early modern era, the medical theories regarding what kept a woman and her unborn child safe during pregnancy remained relatively static. The advice given in the sixteenth century varied little from the advice prescribed in the eighteenth century. One of the reasons for this was that it was hard for these authors to discard popular medical practices assumed to work for many generations. No author

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<sup>372</sup> Chamberlayne, 71.

<sup>373</sup> Wolveridge, 20.

<sup>374</sup> Anonymous, *The English Midwife*, 20-21.

<sup>375</sup> Smellie, 126-127.

would want a mother to deviate from customary practices for fear that doing so would harm her unborn child or result in the loss of her pregnancy.

Along with closely watching her food, exercise, sleep, etc., during her pregnancy, a woman spent her pregnancy preparing for labor and the arrival of her child. This process included finding a reputable midwife who had successfully delivered many babies, and preparing for the baby's arrival by gathering linens and swaddling material that would be used during the delivery and for the baby afterwards.<sup>376</sup> The expectant mother also had to plan for the possibility that she would not survive the ordeal of childbirth; a large number of women died during labor in the early modern era. As the time of childbirth approached, pregnant women in early modern England likely felt a mixture of emotions including hope and joy, but also fear and doubt. It was the changing practices of the birthing room across the early modern era that was to have the largest impact on the life of the mother and her child.

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<sup>376</sup> Audrey Eccles, *Obstetrics and Gynaecology in Tudor and Stuart England* (London: Croom Helm, 1982), 61.

### **Chapter 3: Labor, Natural and Unnatural Deliveries, and Lying-In Period**

#### **Introduction**

Throughout her pregnancy, a woman of the early modern era would anticipate the arrival of a new member of the family, though there was still one major hurdle which she must survive, the delivery of the child and the lying-in process which followed. Maternal death rates were high during the early modern era, with average numbers of maternal death ranging between 7.7 and 15.7 deaths per thousand.<sup>377</sup> Although these odds were not known at the time, surviving textual evidence suggests that women understood that the act of giving birth was dangerous. In order to prepare herself for childbirth and the lying-in period which followed, a wealthy pregnant woman would most likely turn to her midwifery manual to understand what some of the preparations were that needed to be made in advance, as well as what the important qualifications were for a good midwife whose job was to monitor her development through this dangerous process.

Along with advances in the field of medicine, the early modern era in England was a time of religious change resulting from Henry VIII's break with the Roman Catholic Church in pursuit of a legitimate heir. Over the next 300 years the church in England underwent numerous adjustments as Catholicism fell out of official favor and Protestant theology took over the country. These transformations affected more than just the way people worshipped and believed in God. All aspects of life were altered and the process of childbirth was no exception. Whereas the Roman Catholic Church in England allowed a woman access to charms and rituals which compared a woman's suffering to that of the Virgin Mary, the Protestant church disregarded

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<sup>377</sup> Roger Schofield, "Did Mothers Really Die? Three Centuries of Maternal Mortality in 'The World We Have Lost,'" in *The World We Have Gained: Histories of Population and Social Structure* (Oxford: Bail Blackwell Ltd., 1986) 248.

these items as superstitious and declared that a woman should turn only to God in her upcoming time of travail.

### **Preparation for Delivery**

As a woman's pregnancy progressed, there were several steps the expectant mother needed to take to prepare for the birth of her child such as preparing the room in which she would give birth, choosing her midwife, and gathering the needed linens for the newborn child. Because of this, women in early modern England needed to know when they should anticipate the arrival of their child. Estimating the delivery date could be difficult, as many writers disagreed concerning the length of gestation. While some argued that a child was ready to be born as early as the seventh month, others argued for as late as the eleventh month after conception.<sup>378</sup> While it is not known for certain how lay people understood gestation during the early modern era, Linda A. Pollock's research suggested that lay women estimated that their pregnancies would last forty weeks, or nine months.<sup>379</sup>

There were, according to Pierre Dionis, certain occasions in which a surgeon might pretend or try to convince the family of the expectant woman that a pregnancy could be shorter or longer than the average nine months. The two examples he provided were of a woman giving birth only seven months after being wed, or giving birth to a male heir ten or eleven months after her husband had passed away. "The Reputation or Honour of these Women is at stake; and there for the Surgeon, for the Peace and Credit of Families, must not only pretend to be convinc'd of

<sup>378</sup> Audrey Eccles, *Obstetrics and Gynaecology in Tudor and Stuart England* (London: Croom Helm, 1982) 44-45.

<sup>379</sup> Linda A. Pollock, "Experiences of Pregnancy," in *Women as Mothers in Pre-Industrial England*, ed. Valerie Fildes, (New York: Routledge, 1990) 44.

the possibility of them, but likewise bring parallel cases to illustrate and prove it.”<sup>380</sup> This second case was extremely important for reasons other than the woman’s honor in that the length of gestation could determine whether a child was the legitimate heir of the deceased man, and thus whether the child inherited his or her father’s property, and in some cases, his title.<sup>381</sup> This could prove especially important if a supposed heir was an only child, determining whether or not a mother and child held claims to a deceased man’s estate.

Pregnant women prepared for an upcoming delivery by making a room ready for the birth and the lying-in period for a month after giving birth, as well as gathering the necessary linens and furniture, such as a smaller bed used during the delivery, for this room. The woman was also advised to choose the female friends and family members she would want to attend her during this time, and finally, the midwife to see her safely through delivery.<sup>382</sup> This type of knowledge was likely well-known or passed from woman to woman, as it had for most of history, as most of these preparations were not found in the majority of the medical manuals. Another possible reason for this lack of information towards the end of the early modern era was that male authors still considered the preparation for childbirth as part of the women’s realm.

The first step of the preparation was to make ready the room in which the pregnant woman would deliver her child and recover from delivery. Manuals instructed that the birthing chamber should be kept at a warm temperature and made “sweet and clean.”<sup>383</sup> Because of the

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<sup>380</sup> Pierre Dionis, *A General Treatise of Midwifery*, (London: 1719), 164, 165.

<sup>381</sup> Eccles, 45.

<sup>382</sup> Merry E. Wiesner, *Women and Gender in Early Modern Europe*, 2<sup>nd</sup> ed., (Cambridge: Cambridge University Press, 2000), 79.

<sup>383</sup> John Shirley, *A Short Compendium of Chirurgery*, (London: 1678) 102; Robert Barret, *A Companion for Midwives*, (London: 1699) 6.

fear that cold air in the room could harm the woman and unborn child,<sup>384</sup> all crevices were to be plugged up and a fire kept burning in the room at all times, even in the summer months. In the latter part of the eighteenth century this belief fell out of favor as physicians termed this a “suffocation method” that might complicate labor and add to the woman’s suffering.<sup>385</sup> Furthermore the room must be kept dark by shutting out daylight, most likely through the use of heavy curtains which could block the light as well as kept drafts out of the room.<sup>386</sup>

Although only a few of the manuals in this study addressed the use of a special birthing chamber, this advice would have only applied to a small segment of English society. A large part of the population would have lived in homes which could not have a separate room for the expectant mother by herself, as it was quite common for multiple people to share a bedroom. In the most extreme cases, the family home would consist of one large room in which everyone lived. One possible reason for the exclusion of a birthing chamber in some of the manuals was that not all authors assumed separate birthing rooms were necessary.

The next way a woman prepared for childbirth was to make sure the delivery room had furniture placed in the proper location in the room. One such piece of furniture was a little bed or couch of moderate height placed in the room close to the fire and far away from the doors to prevent exposure to cold air. Some authors added a small log or wooden board placed across the foot of the small bed for the pregnant woman to brace herself against when it came time to

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<sup>384</sup> This fear of the cold was not new to the early modern era as warnings against letting the woman giving birth get cold were featured in *The Trotula*. Monica H. Green, ed., *The Trotula: A Medieval Compendium of Women’s Medicine*, (Philadelphia: University of Pennsylvania Press, 2001), 105.

<sup>385</sup> Jacques Gelis, *History of Childbirth*, trans. Rosemary Morris, (Boston: Northeastern University Press, 1991), 97. While Gelis’ speciality is of childbirth in France, it is not unlikely that physicians in England felt the same way, though there is not any strong evidence of this in the manuals used in this study.

<sup>386</sup> Adrian Wilson, “The Ceremony of Childbirth and Its Interpretation,” in *Women as Mothers in Pre-Industrial England*, ed. Valerie Fildes, (New York: Routledge, 1990) 73.



push.<sup>387</sup> The reasoning for this second bed, according Pierre Dionis, was that the use of the large bed in the chamber for delivery required the woman to get out of the bed once she delivered in order for the linens which had been spoiled by the “impurities” of childbirth to be changed for clean ones.<sup>388</sup> By using a second smaller bed, once the woman had given birth, a new mother could be cleaned up and placed in her own bed to rest without the extra delay of changing the sheets. Another benefit of this smaller bed was the midwife would have been able to access the laboring woman more easily.

The final step to preparing the childbirthing room was to acquire the needed linens for the woman, the bed, and the newborn child. Robert Barret told his readers not only to wear clean linen going into labor, but also to collect other extras linens as necessary so “that when her Pains come, they may not be hurrying and shuffling about from Room to Room, crying *Where is this?* or, *Where is that?*”<sup>389</sup> William Smellie gave his readers even more specific instructions, telling them they should prepare the bed with a piece of oiled cloth or dressed sheepskin with several layers of linen placed over it. By doing so, the linen would absorb the fluids and blood lost during the delivery, and the oiled cloth or sheepskin would prevent the bed beneath them from getting wet or spoiled.<sup>390</sup>

Gathering the necessary linens during the pregnancy was crucial to protect the mother from legal action if she was to have a miscarriage and lose the child. By showing the linens the woman had collected she could demonstrate that she was preparing for the delivery of the child

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<sup>387</sup> William Sermon, *The Ladies Companion*, (London: 1671), 93; Anonymous, *Aristoteles Master-piece, or The Secrets of Generation*, (London: 1684), 136-137; Anonymous, *Aristotle’s Master-piece Completed* (London: 1702), 160.

<sup>388</sup> Dionis, 176.

<sup>389</sup> Barret, 6.

<sup>390</sup> William Smellie, *A Treatise on the Theory and Practice of Midwifery*, (London: 1762), 203.

and thus could not be accused of causing an abortion or murdering her child.<sup>391</sup> If a court found that a pregnant woman who had lost her child had not been making the necessary preparations, they could insinuate that the woman purposely caused an abortion or killed her child in order to relieve herself of the responsibility of motherhood. A respectable woman would want to avoid any insinuations that could damage her reputation, and, if formally accused and found guilty, the punishment for such crimes was death.

Similar to the case of the birthing chamber itself, these calls for extra furniture and a wide array of linens would only work for those who had the money to purchase them. The poorer segments of the population might not have more than one change of linen, thus impacting how often they could change the linens on the birthing bed if they could change them at all. However, those who could not afford extra linens could have used other materials such as hay in order to absorb the fluids produced during childbirth and could be thrown out or burned afterwards.

The final preparation for childbirth described in the manuals was that of choosing a midwife who would guide the woman through the birthing process. While the authors told their readers the proper qualifications for a midwife, they did not tell them how to find a midwife and there is not any physical evidence of printed advertisements for midwives. This suggested that pregnant women engaged midwives by referral. A woman would often rely on a recommendation from her friends or members of her family who had been pleased with the service they had received from their midwife.<sup>392</sup> Good midwives were used throughout a woman's childbearing years, and a woman would often refer the midwife to her sisters,

<sup>391</sup> Sara Read, *Maids, Wives and Widows: Exploring Early Modern Women's Lives 1540-1740* (South Yorkshire: Pen and Sword History, 2015) 97.

<sup>392</sup> Doreen Evenden, "Mothers and Their Midwives in Seventeenth Century London" in *The Art of Midwifery: Early Modern Midwives in Europe*, ed. Hilary Marland (London: Routledge, 1993) 14-15.

daughters, and other family members so that some midwives became “family midwives.”<sup>393</sup> A woman wanted to find a midwife she could rely on for many years and considered the task of finding the right one extremely important.

If a woman was not able to get a referral for a midwife from her friends or family members, she could turn to her medical manuals to understand what she should look for in potential midwife candidates. The first characteristic the manuals advised expectant mothers to look for in a potential midwife was that she was middle aged, neither too young nor too old. Paul Portal, a seventeenth-century French Catholic who studied under Francois Mauriceau at the university in Paris and practiced predominantly on those of humbler means,<sup>394</sup> stated that older women lacked the necessary strength a midwife would need in the case of a difficult labor, but young women, especially virgins and newly married women, lacked the prudence, care, and experience in childbirth needed to safely deliver a woman in labor.<sup>395</sup>

The next qualification the expectant mother would want for her midwife concerned the midwife’s health. Because a midwife might be required to watch over a woman day and night for several days, it was important for a midwife to be in good health and not subject to diseases which would sap her strength and prevent her from providing the best care for her patients.<sup>396</sup> Hendrik van Deventer, a late seventeenth-century Dutch physician who specialized in treating rickets before switching to obstetrics and a follower of the Dutch Reformed teachings of Jean de

<sup>393</sup> Evenden, 10, 12-13.

<sup>394</sup> P.M. Dunn, “Paul Portal (1630-1703), Man-midwife of Paris” *Archives of Disease in Childhood. Fetal and Neonatal Edition* 91, no. 5 (2006): F385-7.

<sup>395</sup> Paul Portal, *The Compleat Practice of Men and Women Midwives* (London: 1705) 6; Hendrik van Deventer, *The Art of Midwifery Improv’d*, (London: 1716) 3.

<sup>396</sup> Anonymous, *Aristotle’s Master-piece*, 73.

Labadie,<sup>397</sup> added that a pregnant woman should not serve as a midwife because she may see something that could frighten her and cause harm to her unborn child.<sup>398</sup> Although none of the manuals mentioned this, another reason a pregnant woman would not make a suitable midwife, at least in the final trimester, was that she herself could go into labor and leave her client without the proper care she would need.

If a midwife passed these employment barriers, the expectant mother would investigate the potential midwife's manner including her work ethic, religiosity, and overall personality and temperament. It was important that the woman knew the care she received from her midwife was specifically tailored to herself based on her own constitution and humoral balance. Physicians argued that treating a noble woman like a countrywoman and vice versa could cause injury and even death to the woman.<sup>399</sup> This was particularly true for highborn women as the authors assumed noble women were more delicate based on their less active lifestyles.

As midwives were licensed by the Anglican Church in early modern England, the church and physicians considered a midwife's religiosity to be an integral part of their practice with several authors including "God-fearing" as part of the qualifications for a midwife.<sup>400</sup> The midwife was also to take into account the expectant mother's religiosity by not speaking out against her use of shrines or relics.<sup>401</sup> Originally part of Roman Catholic practice, these items such as girdles of the Virgin Mary or wax amulets into which the words "Agnus Dei," meaning "Lamb of God" were pressed into were still used in the late sixteenth and early seventeenth

<sup>397</sup> David P. Steensma and Robert A. Kyle, "Hendrik van Deventer: Dutch Obstetrician and Orthopedist," Mayo Foundation for Medical Education and Research, <https://dx.doi.org/10.1016/j.mayocp.2016.10.017> (accessed October 25, 2018).

<sup>398</sup> Deventer, 1716, 13.

<sup>399</sup> Peter Chamberlen, *Dr. Chamberlain's Midwives Practice* (London: 1665), 174.

<sup>400</sup> Read, 18; James Wolveridge, *Speculum Matricis Hybernicum* (London: 1670) 27; Deventer, 1716, 10.

<sup>401</sup> Dionis, 174.

centuries.<sup>402</sup> Although the attendant may believe these items did nothing to help the woman in labor, by speaking out against them a midwife may lead their patient to believe them to be an atheist or heretic, and put less trust in the person who was there to help her.<sup>403</sup> However, this may not have been a common problem by the seventeenth century as these items fell out of favor with the rise of Protestantism and more specifically Puritanism. Puritans believed such items to be part of popish superstition and instead argued a woman should rely on prayer above all things to help her in her time of need.

The actions of midwives could, in some cases, depend on the religion of their clientele as the Roman Catholic Church allowed midwives to baptize infants immediately after birth if they believed the child might die before being properly baptized by a priest. Conversely though, information regarding infant baptism could not be found in the manuals written in England. The reason for this was that James I and the Church of England forbade women to baptize dying infants.<sup>404</sup> The Hampton Court conference in 1604 agreed only ministers of the church should have that responsibility. However, two manuals originally published on the European Continent before being translated and brought to England included references to this practice. In Paul Portal's manual the translator left the references to infant baptism in the manual without any annotation, but in Jean Astruc's 1767 manual, the translator wrote that while he wanted to remove the sections concerning Roman Catholic practices as the Protestant midwives of England had no use for them, he could not do so because the act would mutilate the work.<sup>405</sup> These

<sup>402</sup> Mary E. Fissell, *Vernacular Bodies* (Oxford: Oxford University Press, 2004), 44.

<sup>403</sup> Dionis, 174. Although Dionis was writing in France at the beginning of eighteenth century, similar practices had been used in England both before and after the English Reformation.

<sup>404</sup> David Cressy, *Birth, Marriage, and Death: Ritual, Religion, and the Life-Cycle in Tudor and Stuart England* (Oxford: Oxford University Press, 1997), 121.

<sup>405</sup> John Astruc, *The Art of Midwifery Reduced to Principles* (London: 1767) 34-35; Portal, 13-14.

differences demonstrated that religious transformations profoundly altered all areas of life for the English people including practices surrounding childbirth.

Unlike in France and Germany, England did not have a school in which midwives learned their craft. Instead the art of midwifery was passed from one woman to another through an unofficial apprenticeship where the “apprentice” would follow a trained midwife for a period of time in order to obtain the necessary skills needed to start her own practice.<sup>406</sup> Once her apprenticeship period ended, the new midwife applied for a license. In order to get this license she was required to provide a number of witnesses to attest to her skill and good character and then swear that she would not use witchcraft in the course of her practice and, after the Reformation, that she would not allow any child to be baptized as a Catholic.<sup>407</sup> These requirements likely caused problems for certain patients as Roman Catholics remained in England throughout the early modern era. This meant that either the women who delivered babies to Roman Catholics were not licensed by the Church of England, or they broke their oaths in order to baptize the children born into these families.

The mid-seventeenth and eighteenth centuries saw the shift of midwifery from a female dominated profession to one led by men. Man-midwives first appeared in France in the mid-seventeenth century where they became fashionable for wealthy families and were called accoucheurs. Initially, they received the same apprentice-based training as female midwives, but were later given the privilege of “professional” training in a university not allowed to their female counterparts to enhance their skills.<sup>408</sup> This lack of an equal education continued when male-midwives came to England in the latter part of seventeenth century and men were allowed to attend anatomical dissections, whereas women were forbidden to attend them.

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<sup>406</sup> Evenden, 19.

<sup>407</sup> Read, 18-19.

<sup>408</sup> Wiesner, 81.

As male midwives became more popular in England, the authors of medical manuals began to include them in their writings. This included a new section on the proper qualifications for a male-midwife or surgeon. For the most part the qualifications of a male midwife were the same as those for a female, including the need for the midwife to be chaste, modest, prudent, willing to help both rich and poor patients, and religious.<sup>409</sup> However, there were some additional characteristics listed for man-midwives based on the fact that they would be working with a woman intimately. According to Hendrik van Deventer's 1719 manual, a man-midwife should be bashful and not cause a woman in labor to be ashamed during the birthing process.<sup>410</sup> Fifty years later William Smellie wrote that the man-midwife should not violate the trust put in him by the expectant woman and her family by abusing his power regarding the female body.<sup>411</sup> While female midwives were inherently trusted with the female body, the societal power structure led to concern about a man who was not a woman's husband having access to her body in such an intimate way, thus the additional qualifications given for man-midwives.

As the woman and her husband prepared for the arrival of a new baby, manual authors assumed that a woman likely experienced a vast range of emotions.<sup>412</sup> According to historians of pregnancy, the anticipation of confinement was a time of dread and fear as women knew that childbirth had the strong possibility of ending their lives or that of their unborn children, if not both.<sup>413</sup> However, Linda A. Pollock's research suggested that this was not true and that the majority of women looked forward to their time of confinement. According to Pollock, new demographic research revealed the discomfort a woman experienced in the last few months of

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<sup>409</sup> Francois Mauriceau, *The Disease of Women with Child* (London: 1672) 203-204; Smellie, 442.

<sup>410</sup> Deventer, 14.

<sup>411</sup> Smellie, 442.

<sup>412</sup> Pollock, 52. Although the inclusion of the husband was not mentioned in any of the medical manuals used in this study, other historians, such as Pollock, have come across midwifery manuals and personal writings which demonstrated that husbands did play a role in the preparation for childbirth.

<sup>413</sup> Pollock, 47.

her pregnancy led many women to await their confinement and delivery with eagerness in order to facilitate their return to health. Pollock also claimed that if a woman did experience fear, it was likely because she had several months to contemplate the possibility of death, especially if there were complications, or of a pain similar to death.<sup>414</sup> Fear of confinement was probably experienced more by first-time mothers than by those who had been through labor before.

The cause for labor pain, which some women and manuals referred to as similar to being tortured on the rack,<sup>415</sup> was explained by the manuals in various ways medically, socially, and religiously, and appeared across the early modern era. The most common reason given for why women suffered in childbirth was that it was a woman's inheritance from Eve as a punishment for eating the forbidden fruit in the Garden of Eden, as God said to her "I will greatly multiply thy sorrow and thy conception; in sorrow thou shalt bring forth children."<sup>416</sup> Some authors took this connection between purity and pain a step further. Jane Sharp, for example, wrote that a virtuous woman gave birth in pain for if a woman were to "feel but a little pain it is commonly harlots who are so used to it that they make little reckoning of it."<sup>417</sup> For these reasons a woman might regard the pain she experienced as a sign of her virtue and piety, though there is not any evidence to prove this. Francois Mauriceau spoke against the biblical explanation for pain by stating that although women were supposedly given this pain as a punishment, he observed that female animals in labor also experienced the same pains and dangers that their human counterparts did.<sup>418</sup> To Mauriceau, examples from the natural world suggested that pain in labor could not be avoided as it was anatomical, not theological, in nature.

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<sup>414</sup> Pollock, 46-48.

<sup>415</sup> Wiesner, 96. None of the manuals used for this study used such terms.

<sup>416</sup> Nicolas Culpeper, *Culpeper's Directory for Midwives: or, A Guide for Women, The Second Part* (London: 1662), 177; Genesis 3:16.

<sup>417</sup> Jane Sharp, *The Midwives Book* (London: 1671), 170.

<sup>418</sup> Mauriceau, 177.



Once a woman had chosen a midwife, either male or female, she might ask the midwife to visit her once before labor in order to ascertain the state of her genitalia and to estimate whether the labor would be easy or difficult.<sup>419</sup> This seemed to be a rather uncommon practice as it was only mentioned in one of the manuals used in this study. According to Jean Astruc, this examination would be based on four points: the state of the vagina, the pelvic bones, the opening of the uterus or cervix, and the position of the uterus. In this the midwife sought to determine that they were all in proper working order for delivery.<sup>420</sup> If the examination went well the woman would likely fear the upcoming delivery less, but if the midwife found something wrong, she could warn the woman that the imminent birth would be difficult and to possibly prepare herself for the worse possible outcome.

### **Religious Changes**

The early modern era in England was a time of religious upheaval as England seesawed between following the Roman Catholic faith and the new Protestant faith in the first half of the sixteenth century followed by the rise of Anglicanism and Puritanism in the remainder of the period. These breaks were not just regarding church services and practices, but impacted all aspects of a woman's life including that of childbirth and her return to society following her lying-in period. Protestant leaders determined traditions which had been in place in England for centuries, such as the use of religious relics during labor, were superstitious and discarded them, leaving a void which women were unable to fill. Another way in which these changes affected the birthing

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<sup>419</sup> Pollock, 52.

<sup>420</sup> Astruc, 22-23.

process was through the licensing of midwives which was done through the Church of England and required the midwife to be in good standing with church officials.<sup>421</sup>

### **Natural Labor and Delivery**

It was difficult for early modern English women to determine when they might go into labor. Yet Linda A. Pollock has argued that generally women were accurate in their predictions based on four factors: when they started experiencing amenorrhea, or lack of menses; the time the child first moved in the womb; the size of their abdomen; and finally, the increasing pains experienced as they neared confinement.<sup>422</sup> However, physicians and midwives during this time realized that these pains, like today, could confuse women and make them believe they were in labor when they were not.<sup>423</sup> Midwifery manuals throughout the early modern era provided a list of other signs that women should look out for to know if labor was approaching, as well as how to tell a false labor from actual labor. According to the earliest manual published in the early modern era the signs of impending labor were pain in the navel region, thighs, back, and the privities, or genital area.<sup>424</sup> But, these were common symptoms experienced towards the end of a pregnancy, and later manuals provided additional signs such as a heat in the reins, or kidneys, swelling of the legs, the presence of slimy humors, likely the mucus plug, coming out of the womb, a trembling of the legs and thighs, and vomiting which was supposedly caused by the sympathy between the womb of the stomach.<sup>425</sup>

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<sup>421</sup> Marland, 9-10.

<sup>422</sup> Pollock, 44.

<sup>423</sup> Nicolas Culpeper, *A Directory for Midwives* (London: 1651) 167, Edmund Chapman, *A Treatise on the Improvement of Midwifery* (London: 1733), 46.

<sup>424</sup> Thomas Raynalde, *The Birth of Mankind* (London: 1545), 97.

<sup>425</sup> Chamberlen, 115; Mauriceau, 147-148.

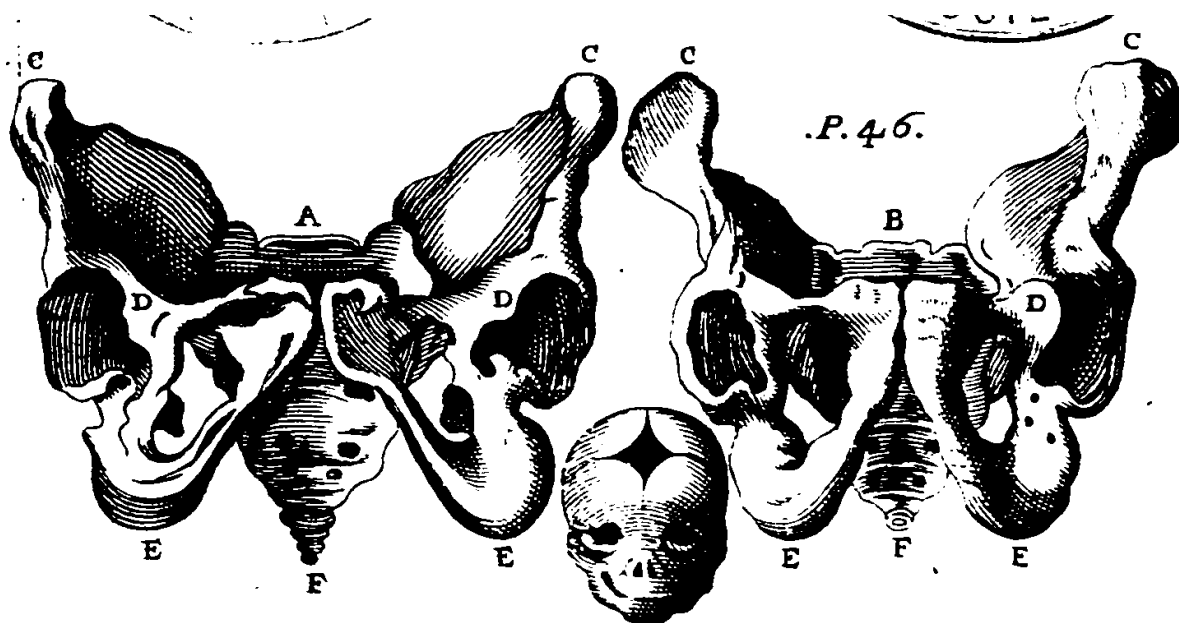
Most ideas regarding labor varied little over the early modern era, but the belief that the pubic joints of a woman separated during labor was ultimately discounted by the anonymous author of *The English Midwife* in 1682. This movement of bones was the supposed reason given that a woman was lame both before and after giving birth.<sup>426</sup> However, as more physicians were able to take part in dissections they discovered the theory of separating pubic bones to be false. In the latter part of the seventeenth century the anonymous author of *The English Midwife* stated that Ambrose Paré, a French barber-surgeon of the sixteenth century, claimed he saw this separation in a woman who had been executed fourteen days after giving birth. Although the author said he respected Paré and his prior work, the author claimed that Paré was mistaken and it was the fall of her body from the gibbet which caused the separation between the pubic bones.<sup>427</sup> After telling this story, the author went on to say that his own observations showed that the skeletons of men and women were different as women have a larger empty space between the pubic bones and the crupper and flank bones were positioned more outwards than those of a man. Furthermore, the author included an engraving of a man and a woman's pubic bones to demonstrate this difference to his readers (see Figure 2).<sup>428</sup> The differences in male and female skeletons demonstrated that the pelvic bone need not separate in labor in order to allow the child to pass through the birth canal.

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<sup>426</sup> Culpeper, 1651, 186.

<sup>427</sup> Anonymous, *The English Midwife*, (London: 1682), 44-45.

<sup>428</sup> Anonymous, *The English Midwife*, 46.



**Figure 2:** Depiction of male (left) and female pelvic bones used to discount the theory regarding the separation of a woman's pelvic bones during labor and delivery.

After the woman had taken account of the symptoms she was experiencing and, based on them, believed herself to be in labor, she would ask her husband or one of the women attending her to go get the midwife. Once the midwife had arrived, provided she had not visited the woman before, she would ask the woman when she conceived and what type of pains she felt before performing an internal inspection to determine if the woman was truly in labor and if so, the child's position.<sup>429</sup> This internal exam was extremely important. According to Edmund Chapman, the position of the child could only be judged by touch, not by eye.<sup>430</sup> Along with the internal examination, the midwife might perform an external exam as well by laying her hands on the woman's belly in order to observe whether the child had moved down in the womb towards the opening.<sup>431</sup>

<sup>429</sup> Thomas Chamberlayne, *The Compleat Midwife's Practice Enlarged* (London: 1656), 80; Sermon, 98, 99.

<sup>430</sup> Chapman, 7-8.

<sup>431</sup> Sermon, 99.

If the midwife did not believe the woman was in labor based on the examination and the answers the pregnant woman provided, she was, under no circumstances, supposed to induce labor. The main reason for this was that the process of inducing labor would likely make the labor last longer than it would if it occurred naturally, and would cause the women to become weak before the critical time of delivery.<sup>432</sup> Along with this warning, the midwives were also instructed not to break the woman's waters unnecessarily. The purpose of the waters, according to the authors, was to lubricate the birth canal. If the midwife was to burst the waters before their time, the passage could dry out or the womb could close back up and make the delivery more difficult.<sup>433</sup>

Conversely, if the midwife had determined that the woman was in labor, the manuals gave several pieces of advice regarding how the midwife should proceed throughout the labor. First, she was to have the woman walk back and forth across the room and when the woman tired, allow her to rest. Once the expectant mother had regained some of her strength she was to repeat this process until the waters broke.<sup>434</sup> This was intended to help move labor along as the weight of the child would cause the opening of the womb to dilate more quickly than if she continually laid in her bed.<sup>435</sup>

In order to help keep the woman strong throughout her labor the midwife was told to keep track how much time had passed since the woman last ate and how much she ate. It was important that the woman not be allowed to be too full or too empty. If she had not eaten recently she could grow weak and fail to deliver the child. If she ate too much, she could get a fever; authors believed a pregnant woman could not digest her food as quickly as she could before she

<sup>432</sup> Raynalde, 107-108; Culpeper, 1662, 176; Chamberlen, 108

<sup>433</sup> Anonymous, *Aristotle's Master-piece Completed*, 162; Portal, 3-4.

<sup>434</sup> Sharp, 187.

<sup>435</sup> Mauriceau, 180.

conceived.<sup>436</sup> When the midwife decided that it was prudent for the woman to eat, there were specific foods she was allowed to have including broths, more specifically chicken or mutton, a poached egg yolk, water with cinnamon mixed in it, or wine, but not both.<sup>437</sup> It was important for the midwife to find a proper balance so that the woman was neither weakened by hunger, nor filled to the point of danger.

Once labor had started there were several tricks that the midwife could use to help labor progress, though most of these tricks were not based on new medical knowledge, but on folk beliefs. The first few of these remedies involved parts of various animals including a snake skin tied around the woman's thigh or waist or hanging a horse's hoof near her genitals.<sup>438</sup> Because these remedies were based on English folklore, the author did not feel required to offer any further explanation. Another option was to use the skin of a wild ox near the woman's genitals. Similar to a loadstone or eagle stone this would attract the child downward and thus make the labor proceed more quickly.<sup>439</sup> As the early modern era continued, manual authors included methods such as these in fewer manuals and instead replaced them with herbal remedies and obstetrical practices, though the use of herbal remedies existed prior to this time.

As the labor progressed, the manuals instructed the midwife to occasionally check the opening of the womb to determine how labor was progressing.<sup>440</sup> It was during this examination that the midwife could know for sure whether or not the woman was having a natural birth, the easiest and safest way to give birth. Although early modern authors had a varying number of conditions for the birth to be labelled as "natural," there were certain aspects upon which they all

<sup>436</sup> Chamberlayne, 85; Sharp, 209.

<sup>437</sup> Chamberlen, 107; Anonymous, *Aristoteles Master-piece, or The Secrets of Generation*, 137.

<sup>438</sup> Chamberlen, 117-118.

<sup>439</sup> Sermon, 96.

<sup>440</sup> Portal, 3.

agreed. The foremost of these was that the child came down the birth canal head first.<sup>441</sup> Beyond this condition, the authors splintered into many various opinions.

Because a natural birth was the easiest and safest way for a woman to give birth, William Smellie tried to reassure his readers that this would be the case for the vast majority of women. Smellie wrote that if one thousand women gave birth in a year then somewhere between 920 and 990 women would give birth naturally.<sup>442</sup> Although Smellie provided these numbers for his readers, it is not known whether this was based on his own observations, if he was merely making an educated guess, or if he was just giving these numbers as a way to provide a morale boost and reassure his readers that the vast majority of births would occur naturally, and thus provide little danger for the mother.

Once the labor had progressed to the stage where the waters broke and the midwife believed the child to be on its way into the world, the practices which the midwife used would change. At this time, she would escort the laboring woman to the correct birthing position; one of the aspects of birth which would change over the course of the early modern era. The position in which a woman gave birth was also one area of childbirth where the English varied from other parts of Europe. For example, Pierre Dionis, writing in France at the beginning of the eighteenth century, wrote that one of the more popular ways for a woman to give birth in England was with the use of a birthing chair (see Figure 3), whereas in his native France the most popular position was for a woman to lay on a pallet bed next to her regular bed.<sup>443</sup>

While Dionis said that the birthing chair was extremely popular in England, the manuals do not reflect this. Instead, most of the manuals refer to various birthing positions the midwife should have the woman in while lying in her own bed or on another smaller bed. Thomas

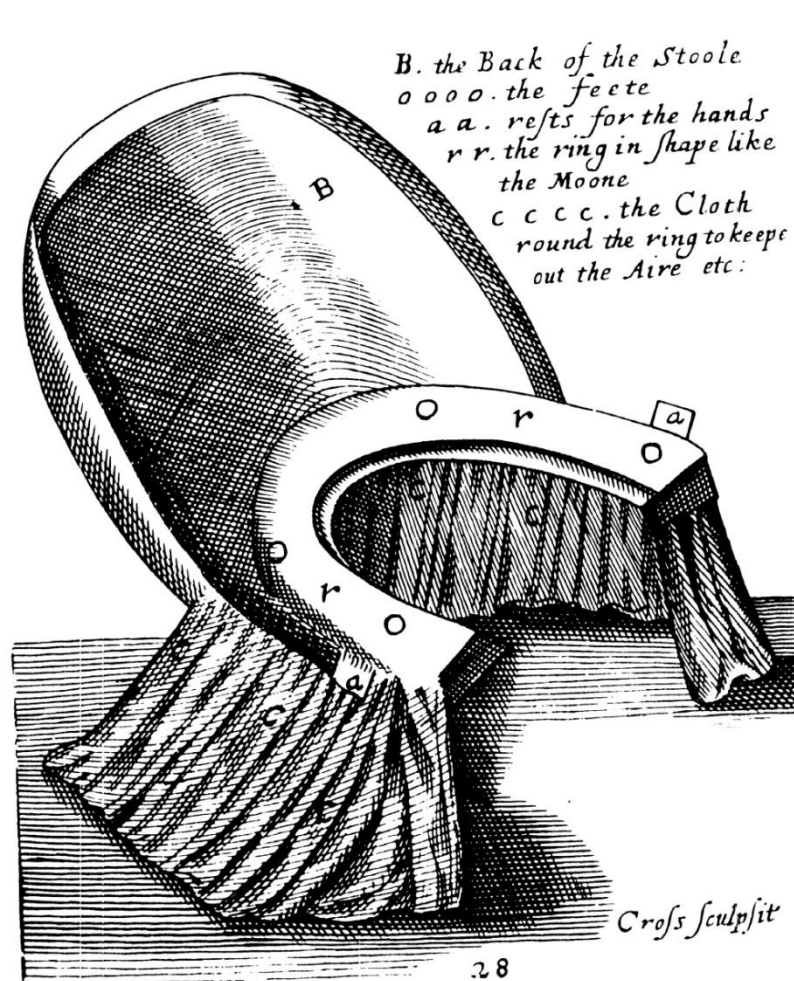
<sup>441</sup> Culpeper, 1662, 171; Wolveridge, 24; Mauriceau, 184; Chapman, 37; Astruc, 41.

<sup>442</sup> Smellie, 199-200.

<sup>443</sup> Dionis, 175.



Raynalde recommended the use of the birthing chair as it had been popularly used in Germany and France at the beginning of the sixteenth century when the manual he translated was originally written by Eucharius Rosslin.<sup>444</sup> A century later James Wolveridge wrote that while some women were delivered in their beds, it was best for the midwife to require the woman to use a birthing chair.<sup>445</sup> For the most part, though, the majority of manuals described the positions the woman should be in while lying in her own bed.



**Figure 3:** Birthing chair included in various midwifery manuals published in the early modern era, *The English Midwife*, 1682

<sup>444</sup> Raynalde, 106-107.

<sup>445</sup> Wolveridge, 27.



Once the woman was in the correct birthing position, whether it be in a chair or on her bed, it was the job of the midwife to coach the woman in order to make the best use of her contractions. In a manner similar to that used in the present, the manuals instructed the midwife to tell the woman to shut her mouth, hold her breath, and to bear down or push.<sup>446</sup> Physicians claimed that the act of the woman holding her breath would press her body's spirits downward and help the baby to come out.<sup>447</sup> This belief, like much of the practice of medicine at the time, was based on wisdom taken from Galenic tradition which said that a woman who breathed inward during her throws, or contractions, would deliver in great pain because the act of breathing in drew the muscles attached to the womb upwards, inhibiting labor.<sup>448</sup>

After several sessions of pushing and the head of the child began to appear, the midwife would support the child's head as it left its mother's body. When the next pain came after this the midwife would put their hands under the child's arms and pull the child out gently.<sup>449</sup> Because several authors defined a natural birth in the early modern era as having very little need of the midwife's assistance the authors included very little information in their manuals as to what a midwife should do beyond encouraging the mother and receiving the child as it was born. Yet several authors wrote about potential crises. In some rare instances a child could be born with part of the amniotic sac still covering their head or face. Many people believed this type of birth signified that the child would have good luck or do something incredible in their future, though none of the authors personally believed this. In some cases the authors argued that a child born with the caul still on their head was weak and would not have a long life.<sup>450</sup> In contrast, other

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<sup>446</sup> Chamberlayne, 82.

<sup>447</sup> Wolveridge, 28; Anonymous, *The English Midwife*, 35.

<sup>448</sup> Sermon, 96.

<sup>449</sup> Chamberlayne, 83; Sermon, 102-103; Barret, 10-11.

<sup>450</sup> Culpeper, 1651, 173, Sharp, 213. Culpeper's reasoning for this was that the lack of movement of the child during the birthing process which left the caul on the child's head indicated that the child was weak.

authors threw out all folk beliefs and said that this only signified that the labor had been an easy one as experience showed that women who had difficult labors rarely had this happen.<sup>451</sup> Perhaps this belief changed over the course of the early modern era because fewer people writing these manuals in England attributed events in their lives to superstition and instead relied on their observations to make sense of such events.

After the midwife had ascertained that the newborn child was breathing, crying, and appeared strong, many authors instructed the midwife to go ahead and tie off the navel string, or umbilical cord, and cut it, though there were those who disagreed with this practice and stated that it should be done after a short period of time.<sup>452</sup> Cutting the cord, manual authors argued, helped to keep the blood and spirits in the child instead of letting them flow into the afterbirth which would be discarded after it was delivered.<sup>453</sup>

Just as in the case of a child being born with the caul on their head, there were folk practices connected with the cutting of the navel string. According to this practice, the midwife should cut the navel string of a male child long, as it will give the child a strong penis, and should cut the navel string of a female child shorter, as it would make the child more modest as well as make her vagina more narrow.<sup>454</sup> Both of these practices are seemingly connected to the readers' concern about having legitimate children to succeed them, as a longer penis would mean that the male would be able to better help his wife conceive, while the narrow vagina and enhanced modesty would prevent a woman from straying and being a loose woman. Similar to the case of the caul, the authors who included these practices did so as a way to disprove them.

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<sup>451</sup> Anonymous, *The English Midwife*, 160-161; Astruc, 45.

<sup>452</sup> Wolveridge, 30.

<sup>453</sup> Sharp, 212.

<sup>454</sup> Culpeper, 1651, 175.

Nicolas Culpeper wrote in his 1651 book that his contemporary authors often laughed at this principle, even providing the exact words of another author by the name of Spigelius

I must of necessity make my self merry with this Opinion, for if it were in the power of Women to make the Privities greater or lesser by cutting off the Navel-string, in sober sadness, all Women laboring with Child would complain of Midwives, and that deservedly too, because they left them not a great part of their Navel-string when they were born, that so their Privities being large they might be delivered with the more ease.<sup>455</sup>

A similar folk belief about the navel string stated that it should be cut longer in a male so that his tongue would also be longer and be more able to speak plainly whereas the female's should be cut shorter to their tongue will not be as nimble.<sup>456</sup> This practice was intended to make children conform to the gender norms of their time: a man was supposed to be able to speak clearly and wittily whereas a woman was supposed to speak less than a man. Either way, these folk beliefs did not have the support of the medical authors and were not mentioned in the manuals after 1671. However, this does not mean that these beliefs and practices were no longer practiced. Those who did not have access to these manuals, and perhaps some who did, might still have believed in them. Once the midwife had cut the navel string as long as the child seemed to be well, there was nothing else to be done but to wrap the child up and set it to the side in order to turn their attention back to the mother and help her with the delivery of the secundine, or afterbirth.<sup>457</sup>

One way in which the delivery of the afterbirth was vastly different in the early modern era from the present is that an overwhelming majority of the manuals recommended that the midwife or physician assist the afterbirth to come out, instead of letting nature take its course.

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<sup>455</sup> Culpeper, 1651, 175.

<sup>456</sup> Sermon, 214.

<sup>457</sup> Chamberlayne, 83.

According to Nicolas Culpeper, the afterbirth should not be forced away unless there was a fear that it may not come out without assistance.<sup>458</sup> Edmund Chapman argued that it was important to extract the afterbirth the moment the child was born because the opening of the womb was fully dilated and would allow the afterbirth to come forward without any force or pain. On top of this Chapman wrote that midwives should not trust the afterbirth to come away on its own and to instead assist in its removal.<sup>459</sup> Taking Culpeper's side of the argument, William Smellie argued in 1762 that if the woman was not in danger of bleeding out, then she should be allowed to rest a little as this would give the womb time to contract and separate the placenta from the womb.<sup>460</sup> Culpeper and Smellie were a part of the minority though as most of the manuals instructed the afterbirth be manually removed.

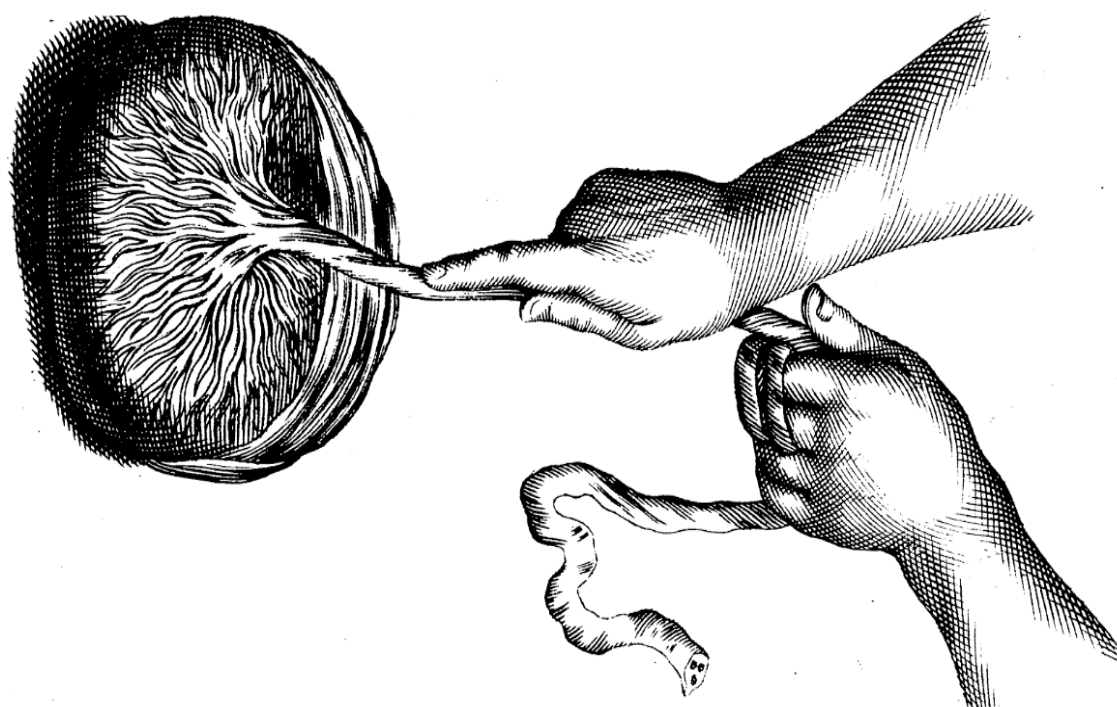


Figure 4: Francois Mauriceau's depiction of the removal of the secundine, or afterbirth, *The Disease of Women with Child*, 1672

<sup>458</sup> Culpeper, 1651, 183.

<sup>459</sup> Chapman, 42, 43.

<sup>460</sup> Smellie, 234.

Another method prescribed in one of the midwifery manuals was one which was extremely invasive and required the midwife or physician to insert their hand into the woman's womb and physically pull the afterbirth out.<sup>461</sup> While it may seem extremely cruel to do something like this to modern audiences, Deventer claimed that this was one way in which the midwife or physician could determine if any pieces of the afterbirth had been left behind, which could prove fatal for the mother.<sup>462</sup> In this case, the author was thinking of the best process for the mother, even if it was not the most pleasant one.

Once the woman had been delivered of both her child and the afterbirth, it was time for her to be put into her bed and for the lying-in process to begin. However, before discussing this period of time, it would be best to now discuss some of the issues a midwife might face with a difficult or preternatural labor, which would require her to have knowledge of a variety of situations and to be able to implement a solution to the problem presented quickly and correctly.

### **Difficult or Preternatural Labors**

The odds of a woman having a difficult or preternatural labor was estimated by an early modern physician at less than ten percent. Yet, this did not mean that a midwife would only spend ten percent of her time preparing for them. In order to safely deliver the child and save the life of the mother during a difficult labor, the midwife needed to understand what could cause the potential difficulties in order to choose the correct treatment. There were multiple reasons that a woman might experience a difficult labor, and these reasons tended to fall into one of three categories: problems with the woman, problems with the child, and external causes. The category which received the most coverage in the manuals was problems concerning the woman, with maternal

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<sup>461</sup> Deventer, 138.

<sup>462</sup> Deventer, 140.

age being the most commonly cited cause. If a woman was too young, then physicians believed the passage, or vagina, would be too narrow and strait, whereas if the woman were too old then the passage would be drier and unable to stretch as needed.<sup>463</sup> Raynalde was even more specific when addressing the woman's age by classifying "too young" as being between twelve and fifteen years old.<sup>464</sup> This inclusion demonstrated that his manual was not written for the common English woman. The average age of marriage in the seventeenth century was between twenty-five and twenty-six years old.<sup>465</sup> However, the age of marriage tended to be lower for women among the upper classes and nobility; marriages were often used as a way to make alliances with other families and by marrying earlier it was more common for the brides to become pregnant at an earlier age in hopes of producing heirs to inherit land and titles, thus leading to said difficulties in labor.

To prevent problems connected to maternal age the authors included advice for readers. For a woman who was too old or whose passage was considered to be too dry, Peter Chamberlen recommended the use of herbal baths and ointments in the five or six weeks leading up to their time of labor.<sup>466</sup> Francois Mauriceau suggested that a dry passage be treated by anointing it with oil, animal grease, or fresh butter for a period of time before labor in order to relax and dilate the passage.<sup>467</sup> Mauriceau argued that by doing this, the expectant mother could moisten her passage, or birth canal, which would allow it to stretch as needed in the birthing process.

The next category in the list of causes of difficult labor were those regarding the child the woman carried. Unlike the problems contributed to the woman's body, there was not any way for the mother to prevent these problems. The most common reasons for a difficult labor involving

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<sup>463</sup> Raynalde, 99; Mauriceau, 193.

<sup>464</sup> Raynalde, 99.

<sup>465</sup> Mark Kishlansky, *A Monarchy Transformed: Britain 1603-1714* (London: Penguin Books, 1996), 10.

<sup>466</sup> Chamberlen, 105-106.

<sup>467</sup> Mauriceau, 195-196.

the child itself included the child being in the wrong position, being too large to pass through the mother's hips, or that the child was dead.<sup>468</sup> Because there was not any way to prevent these problems, the authors did not spend a lot of time discussing them in the manuals, instead including them so that the midwife and manual readers would be aware of these possible problems.

The final category of causes for a difficult labor was that of external causes, meaning the cause had nothing to do with the mother or child, but could affect her baby nevertheless.

Humoral medicine stated that the external body was intimately connected to the internal body in such a way that the external environment could have an effect on the internal body. While the sources of difficult labor mentioned above were for the most part based on medical knowledge, these external causes were not and tended to be aligned with ideas presented by the ancient authors. Humoral theory stated that an excessive amount of heat or cold in the birthing room could cause a hard labor because they would weaken the mother or cause her womb to close up, making it harder for the baby to come out.<sup>469</sup> Another example was based on the idea that the womb had a sense of smell so the authors warned against the mother being able to smell sweet things as this would cause the womb to rise upwards in order to better reach the smell.<sup>470</sup>

William Sermon wrote in his manual that if anyone in the birthing room had locked or crossed their fingers, it could cause the woman to be unable to give birth.<sup>471</sup> As with the problems of the woman's body, some of these potential problems could be prevented by either not doing the very thing that caused these problems such as having sweet smelling things in the birthing room or allowing those in the room to cross their fingers. In order to battle the problems caused by too

<sup>468</sup> Chamberlen, 101; Anonymous, *The English Midwife*, 43.

<sup>469</sup> Wolveridge, 34.

<sup>470</sup> Sharp, 172.

<sup>471</sup> Sermon, 113.

much heat or cold, the midwife and those in the birthing chamber would be responsible for keeping the room at a moderate temperature so that the mother may have an easier labor.

If something went wrong during labor, a woman's odds of dying in childbirth increased dramatically. Therefore, Francois Mauriceau made sure to instruct his readers that if a woman began to have a difficult labor, it was the job of the midwife to reassure the woman and tell her that she was in no danger, that other women had pains worse than she was experiencing, and that soon she would have the child that she desired.<sup>472</sup> Mauriceau probably assumed that a woman falling into hysterics out of fear for her life would only cause more problems for herself, and that the best thing for the midwife to do was to keep her patient calm and focused on the task at hand. William Smellie also wrote how the midwife was to keep the woman calm, though he resorted to what today is called the "placebo effect." Smellie told his readers that the woman's lack of patience and anxiety during a long labor could cause more harm than good and make the labor last even longer. If the woman could not be talked down using words like those mentioned above, Smellie instructed that the midwife or physician give her "innocent medicine" to please her mind.<sup>473</sup> Although the idea that the woman in labor must remain calm was not brought up in all the manuals used in this study, it was likely an important concept that the midwives mastered in order to best help their patients.

As the midwife worked to keep her patient calm, the authors of the manuals said she needed to take an account of what was happening and from that information, decide if a surgeon or man-midwife should be called. In some cases this occurred relatively early in labor while in others it was only after many other steps had been taken. According to Thomas Chamberlayne in 1656, the midwife should summon a surgeon if the midwife was unable to dilate the passage to

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<sup>472</sup> Mauriceau, 199.

<sup>473</sup> Smellie, 222.



allow the infant to come out.<sup>474</sup> Robert Barret wrote that a midwife should call for a surgeon if the child presented in the wrong position, the waters broke with no child following them, or if the mother suffered from convulsions, seizures, or an inordinate amount of bleeding.<sup>475</sup> No matter the situation, the authors of these manuals argued it was important for the midwife to understand where her ability to help the woman ended and when the need for a man-midwife or surgeon began.

However, as more men turned to midwifery in the early modern era the authors claimed that a large number of midwives became afraid of losing business to them and this fear adversely affected the women in the care of midwives. In Francois Mauriceau's 1672 manual, *The Diseases of Woman with Child*, he claimed that midwives were so afraid of losing business or seeming ignorant in front of their patients that they would "put all to adventure" or try anything, save calling a surgeon, when a woman was having difficulties. He then stated that all women who valued their lives should avoid midwives such as these, though it is worth nothing that women turning away from their midwives would only provide more business for the practitioners making such claims. Another example Mauriceau provided for his readers was that to avoid calling a surgeon, the midwife would maliciously scare the woman in labor and slander the surgeons by saying they were like butchers or hangmen. Because of midwives such as these Mauriceau claimed that some women chose to die with their child in them rather than to submit themselves to the deadly care of the surgeons.<sup>476</sup>

These supposed attacks by midwives against physicians have been viewed in several different ways since the early modern era. For much of the past century, it was the words of the medical authors which historians agreed with, stating that midwives of the early modern era were

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<sup>474</sup> Chamberlayne, 118.

<sup>475</sup> Barret, 4.

<sup>476</sup> Mauriceau, 182.

unskilled and resorted to fear tactics to avoid the loss of their income and position in the community. In recent decades however, there has been a push back against this theory by women's historians writing that midwives were highly skilled practitioners who were trying to fight against the patriarchy to save one of the few respectable female professions of the time. These historians argued that authors of medical manuals slandered midwives who were trying to prevent male encroachment on their female professional domain.<sup>477</sup> There is truth in both of these statements as midwives were skilled professionals who feared losing their income and their respectable position in society as a midwife.

One type of difficult labor that was brought up in several of the manuals was when the waters broke too soon without labor continuing to progress towards delivery. Most of the manuals addressed the problem with the use of herbal recipes to provoke labor or the use of oil, butter, or egg yolk to lubricate the birth canal.<sup>478</sup> One manual referenced the use of a talisman, the eagle stone or aetite, which a pregnant woman was instructed to keep close to her person to protect the fetus in utero. Supposedly, if the midwife moved the eagle stone to the woman's thigh, it could help induce labor and bring the baby out. Once the child was born, it was imperative that the midwife removed the stone for fear that it could cause the entire womb to leave the body.<sup>479</sup> Some early modern authors of medical manuals doubted the validity of this treatment. In fact, Peter Chamberlen referred to Culpeper's use of the eagle stone as "an idle fable like the rest of his *Quackeries*."<sup>480</sup> This split in medical ideas is especially interesting considering that only fifteen years had passed between the publication of these texts, and both were originally written in England.

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<sup>477</sup> Cressy, 59, 61.

<sup>478</sup> Chamberlen, 109; Shirley, 105; Sharp, 200.

<sup>479</sup> Culpeper, 1651, 170.

<sup>480</sup> Chamberlen, 139.

Yet authors agreed that one of the key causes of a difficult labor was that of the child in the wrong position. Although William Smellie stated that an overwhelming number of births a midwife attended would be natural, it was still imperative that a midwife know what to do in this situation. One interesting difference observed in these manuals over the course of the early modern era was how the authors addressed these problems. The first manuals of the era included several images demonstrating the various positions of the child in the womb. Alongside these images the author would provide instructions on the specific way the midwife should fix the child's position. In the seventeenth century however, these images began to fall out of use and instead the authors simply described the position, perhaps, because the authors realized that the images did nothing to help the midwife or physician to know the position of the child. Another possible cause for the removal of these images was that it cost too much for the author to include them in their manuals, though there is not any firm evidence for this.

Authors' instructions to midwives seeking to deliver children in the incorrect birthing position also changed. For the most part, in the sixteenth century and for most of the seventeenth century the manuals instructed their readers that in the majority of cases, the child should be turned in the womb to the natural birthing position, meaning head down. The only exception to this rule was when the child was presenting itself feet first, in which case the midwife was to deliver the child by the feet, after making sure that the child's hands and arms were down by its sides.<sup>481</sup> The first notice of a deviance from this practice occurred in the second half of the seventeenth century when the anonymous author of *The English Midwife* wrote,

Those Authors. . . that have written of labors and never practices them as many Phisitions and Chirurgions have done, do order all by the same precept often repeated, that is to reduce all unnatural and wrong births to a natural and right posture...but as I have said

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<sup>481</sup> Culpeper, 1662, 179-180; Chamberlen, 110; Shirley, 107; Sharp, 201; Sermon, 128.

before, if they themselves had ever had the least experience, they would have known that it is very often impossible.<sup>482</sup>

The author of *The English Midwife* insinuated that not all the midwifery manuals published in England were actually written by those who had experience in the field of midwifery, and that midwives should be careful about which manual they used as their guide. The wrong manual could cause the midwife to bring unnecessary pain and suffering to the woman in labor or could even cause the death of her or her child. This was especially important as midwifery was a business and the choice of an inadequate manual could negatively affect a midwife's ability to provide for herself.

While other manuals had the writer "talking" to the reader about what to do in various situations, *The English Midwife* addressed the turning of a child in the womb through a fictive dialogue between a physician and a midwife by the name of Eutrapelia. The doctor asked Eutrapelia what to do if the child was presenting in a specified position, to which she gave her opinion. While in some of the responses the doctor praised Eutrapelia for her knowledge, in others he disagreed with her explanations, arguing, for example, why it was better to deliver a child by its feet.<sup>483</sup> While this method of using a dialogue between a midwife and a doctor could be used to argue two ways of thinking, one could view this correction as a subtle way of demonstrating the doctor's superior knowledge over that of the midwife.

Following the publication of *The English Midwife*, more of the manuals used in this study instructed their readers that the best thing to do if the child was positioned incorrectly in the womb was to find the child's legs in the womb and deliver it by its feet.<sup>484</sup> The change between

<sup>482</sup> Anonymous, *The English Midwife*, 60.

<sup>483</sup> Anonymous, *The English Midwife*, 60, 75.

<sup>484</sup> Barret, 26; Chapman, 20; Portal, 21-23; Deventer, 227; Smellie, 245.

these manuals did not go unnoticed by John Astruc, whose manual was published in England in 1767. In his manual Astruc wrote, “Reason has prevailed at last; and at present all the world agree as to this point. It is allowed, that not only the child should not be turn on its head, when it presents its feet; but that it is, on the contrary, on the feet, it should be turned, in almost all the bad situations in which it may be found in the *uterus*.”<sup>485</sup> Through personal experiences and practices physicians and midwives corrected their practices in order to more safely deliver a child presenting in an incorrect position and changed the instructions they provided to their readers.

The next possible cause for a woman’s difficult labor was that the child seemed to be too large to fit through the birth canal. Unfortunately for women of the early modern era, there were not many options as to how this could be remedied. If the midwife failed to find a way to fit the child through the birth canal, the mother or child could die. The most common advice given in the manuals for this situation was for the midwife to anoint her hand and the birth canal with oils and to try to further dilate and enlarge it so that the child might be better able to pass through.<sup>486</sup> Such advice could be particularly problematic though when the theory of pelvic bone separation was held by physicians as they argued that all they needed to do was to stretch the birth canal in order for the child to pass through.<sup>487</sup> Another possible method the midwife used if the child’s head was too large was to use the fontanelles, or the space between the child’s skull plates, to press the head in such a way that the bones would overlap and thus make the head smaller.<sup>488</sup> This method could prove dangerous. The act of pressing together the child’s skull could possibly cause damage to the child’s skull or worse, the brain. The fact that this was only mentioned in

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<sup>485</sup> Astruc, 18.

<sup>486</sup> Chamberlen, 209; Sharp, 200-201.

<sup>487</sup> Eccles, 105. Because of this theory physicians did not realize that a child could be too large to pass through the pelvic opening, and thus be unable to be born.

<sup>488</sup> Chapman, 26.

one manual could lead one to think that this method was not a popular choice among midwives, though this study did not feature enough manuals to prove this as conclusive.

One of the methods of delivering a child with an unusually large head that was developed during the early modern era was the use of forceps, an instrument with broad pincers that could be used to grasp the baby's head and pull it out. Forceps were invented sometime during the seventeenth century by one of the men of the Chamberlen family, probably by Peter the Elder, who died in 1631.<sup>489</sup> When the Chamberlens first invented the forceps they kept them a secret. The first author to mention the use of forceps was Edmund Chapman, who wrote his manual over a century later in 1733.<sup>490</sup> Chapman held a negative view of the Chamberlens for keeping their instrument a secret; the lack of better options led other midwives and surgeons to use instruments such as the crochet, or hook, which, while it saved the lives of many women, resulted in the death of an untold number of children.<sup>491</sup> This is evident as previous authors such as Francois Mauriceau wrote that when the child's head was too big and the midwife could find no other way to remove the child, then it was better to kill the child than to try and save the child and kill the mother in the process.<sup>492</sup>

While Edmund Chapman was the first to describe the use of forceps in his 1733 manual, William Smellie provided a detailed description of the use of these instruments as well as how to keep an anxious woman from seeing or hearing them mentioned. According to Smellie, the mere word "forceps" would frighten expectant mothers, let alone the sight of them. In order to prevent the woman in labor or her helpers from seeing the forceps, Smellie advised his readers to cover

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<sup>489</sup> Gill Paul, *A History of Medicine in Fifty Objects* (Buffalo, New York: Firefly Books, 2016), 79. The Chamberlen family were Huguenots refugees who fled France in the latter part of the sixteenth century. William Chamberlen, the head of the family, had two sons, both named Peter.

<sup>490</sup> Smellie, 251.

<sup>491</sup> Chapman, 12.

<sup>492</sup> Mauriceau, 228.

the lower part of the woman's body with a sheet and to hide the handles in their pockets as they were bringing them to the bedside.<sup>493</sup> Smellie also advised covering the portions of the instrument inserted into the woman's body with leather to prevent the clanging of metal letting the woman know what was happening.<sup>494</sup>



Figure 5: William Smellie-type obstetrical forceps from the Science Museum London

Once the instruments had been secretly brought to the bedside and lubricated to make their entry into the birth canal less difficult, the practitioner would insert his hand into the birth canal, find the child's head, and place one blade of the forceps between his hand and the child's head on each side. The blades would be locked together and when the woman's next contraction started, the physician would pull the child outward and from side to side until the head had been born. At this point the physician would hide away the forceps once again, and deliver the child as

<sup>493</sup> Smellie, 265.

<sup>494</sup> "Smellie-type Obstetrical Forceps, United Kingdom, 1740-1760," Science Museum Brought to Life: Exploring the History of Medicine, <http://broughttolife.sciencemuseum.org.uk/broughttolife/objects/display?id=92304> (accessed October 25, 2018).

normal.<sup>495</sup> Finally, Smellie instructed that the leather coverings of the forceps be removed, washed, and replaced after each use, especially if the physician believed the woman to have an “infectious distemper,” or venereal disease.<sup>496</sup> However, not all physicians took the time to clean their instruments after each use, resulting in the spread of germs and puerperal or childbed fever, though as germ theory was not known at this point, these physicians did not realize their lack of care could cost the lives of their patients and leave newborn children without a mother. While the invention and proper use of tools such as forceps allowed physicians to deliver more living children, they also introduced another way in which a mother might die from her ordeal.

Although there had been other instruments used in difficult deliveries prior to the invention of the forceps, these were more often used for the dismemberment and removal of a dead or undeliverable child as the use of them on a live child would kill them. One such example of these tools were the crochets, or hooks. To use these instruments, the physician or midwife was to find the sutures in the baby’s skull and to push a pair of scissors blade first into the sutures to create a large opening in the head so that the attendant’s fingers or a crochet, or hook, may be inserted into the opening and then used to pull the child’s body out of the mother. If for some reason the child could not be pulled out in such a manner the attendant was to attach the crochet into the child’s mouth or back of the neck to draw the child out.<sup>497</sup> With a description like this, it is not hard to see why women feared the use of instruments in the birthing process as they were linked with the death of a child and the suffering of the mother.

As terrible as it was to remove a dead child in such a way, the authors of the manuals stated there was nothing worse than the mutilation or killing of a child that the attendant falsely believed to be dead. Thus it was imperative that the midwife or physician know how to tell

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<sup>495</sup> Smellie, 266-268.

<sup>496</sup> Smellie, 289.

<sup>497</sup> Smellie, 298-300, 302.



whether the child in the womb was alive or dead. The author of *The English Midwife* wrote that there had been several instances in which a child had been born alive after having their arms cut off by the use of other instruments or killed because this important skill was not known. Because of this, the author then wrote of various methods of determining whether the child was still alive, while remarking that it was better to treat a dead child as living than a living child as dead.<sup>498</sup>

The midwife was not to rely solely on whether she had felt the baby move as some babies moved less than others, especially right before birth. The author then said the midwife should insert her hand into the womb and attempt to feel a heartbeat traveling through the navel string or to stick a finger in the child's mouth to see if the tongue moved as part of the sucking reflex.<sup>499</sup> By knowing the symptoms and taking steps to determine the child's viability, the midwives and physicians thought they could ensure that a child still alive in the womb would be born alive without unnecessary mutilations.

One unusual inclusion in one of the manuals which discussed the removal of a dead child was that Paul Portal, a French Catholic, included instructions that the dead child should be baptized before being removed from its mother's body.<sup>500</sup> Although England was a majority Protestant country, Roman Catholics were still present, though they may not have been so openly for fear of persecution. This inclusion of infant baptism in the manual addressed one of the differences between Roman Catholics and Protestants in England, and the rest of Europe. Roman Catholics believed that a child must be baptized in order for it to be buried in holy ground and to receive salvation whereas certain Protestants sects, such as the Anabaptists, believed that baptism was for once a person had decided to become a follower of Christ which infants were unable to

<sup>498</sup> Anonymous, *The English Midwife*, 130.

<sup>499</sup> Anonymous, *The English Midwife*, 131.

<sup>500</sup> Portal, 14.

do.<sup>501</sup> Along with this was the previously mentioned ban in England on midwives baptizing infants in the seventeenth and eighteenth centuries. Although the references to Roman Catholic practices were left in this manual for fear of destroying the integrity of the text, they offer insight into the differences between families in England in the early modern era.

One final type of birth which could cause a pregnant woman difficulty in labor was the presence of more than one child in the womb. While a woman may have guessed that she was expecting more than one child based on symptoms she experienced throughout her pregnancy she would not know for certain she was carrying more than one child until she had delivered them. For the majority of families in England during the early modern era, the arrival of twins, or even triplets, would be seen as a blessing as there would be a chance that one of them would survive to adulthood and therefore carry on the family name and inherit the property. The arrival of twins could be problematic though for members of the upper classes, nobility, and royal family as one of the babies would inherit the title, land, and power, and the other would be shifted to the role of the “spare” in case something should happen to the first child. However, it was not the twin who was born first who would inherit the title and land, but the child who was born last. Whereas in the present the twin which is born first is determined to be the oldest, in the early modern era some people believed that the twin that was born last was the oldest as it had been conceived before the child born first.<sup>502</sup> What is not known is when this idea fell out of favor and changed to the belief held today, or how it would have impacted a person’s inheritance.

While the above mentioned difficulties could be resolved relatively soon after their appearance was known, there was still a possibility that labor could move slowly and weaken the

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<sup>501</sup> Cressy, 103.

<sup>502</sup> Dionis, 119. Interestingly enough though, there are not any known cases of twins being the first born children of a noble or royal family in England.

mother over time. If this occurred, the manuals instructed the attendant to strengthen her through the use of various different methods ranging from food or drink to herbal remedies to fumatic treatments. The discovery of the circulation of blood in the latter part of the seventeenth century affected what type of treatments physicians gave their patients. Prior to this Nicolas Culpeper wrote that the midwife should give the woman in labor wine or a confection made from alkermes, or the dried bodies of scale insects, in order to give her more strength.<sup>503</sup> William Sermon recommended the midwife throw white amber on hot coals and let the fumes from this rise into the woman's nose and mouth. Additionally, the woman was to drink a cordial made from lavender, bezoar water, violet syrup, clove, gilliflowers, alkermes, and vitriol oil. Sermon also advised the woman to drink the milk of a dog or the breast milk of another woman, though he put little faith in this treatment and no other author mentioned it.<sup>504</sup> After William Harvey's discovery William Smellie told his readers to give the woman in labor something that would "quicken the circulating fluids" such as amber, castor, myrrh, or heavy liquor.<sup>505</sup> Such remedies would enable the attendant to help the woman in labor to regain her strength and make it safely through the delivery.

If the midwife provided a means to restore the woman's strength and the woman continued to deteriorate, the midwife needed to know the signs that the woman was in danger of dying. This information would enable the family and woman to make any necessary preparations such as the receiving of communion and saying goodbye to her husband and any other children she might have. Only two of the manuals analyzed in this study addressed this concern, which is somewhat surprising given the high maternal death rate in the early modern era. The two authors who discussed this issue were Peter Chamberlen and Jane Sharp, writing in 1665 and 1671

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<sup>503</sup> Culpeper, 1651, 179.

<sup>504</sup> Sermon, 121,122.

<sup>505</sup> Smellie, 222.

respectively. It was during the second part of the seventeenth century that England experienced an increase in the number of maternal deaths in childbirth from 11.6 in the first half of the century to 15.7 maternal deaths per one thousand births.<sup>506</sup> Rising maternal morbidity rates may have prompted these authors to include these sections as a way to ensure that their midwife readers would be able to handle such a situation.

The symptoms Chamberlen and Sharp provided included fainting, memory failure, weak voice, refusal or inability to eat, a high pulse, and convulsions or seizures.<sup>507</sup> Seizures would have been a particularly dismal sign as they were a symptom of what is known today as eclampsia, a disorder in which the mother can suffer high blood pressure, seizures, organ damage, and eventually death if the child is not delivered. The early modern era was especially important regarding eclampsia as it was during this time that the disorder was discovered. The word “eclampsia,” from the Greek meaning “lightning,” first appeared in a gynecological text in 1620 by Johannes Varandaeus. Varandaeus’ text was originally written in Latin and it is not known when it first appeared in English, and none of the manuals used in this study used the word “eclampsia.” Francois Mauriceau was one of the first physicians to systematically describe eclampsia and note that primagravidas, or women giving birth for the first time, were at greater risk of having it. Yet it was not until his 1710 manual that he attributed the cause of eclampsia to abnormal lochia flow or the death of the baby while still in the womb. Several decades later a man by the name of Bossier de Sauvages differentiated preeclamptic seizures from those experienced by epileptics as the preeclamptic seizures stopped once the event which caused them, the pregnancy, was removed.<sup>508</sup>

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<sup>506</sup> Schofield, 248.

<sup>507</sup> Chamberlen, 139-139; Sharp, 189-190.

<sup>508</sup> Mandy J. Bell, “A Historical Overview of Preeclampsia-Eclampsia,” *Journal of Obstetric, Gynecologic, and Neonatal Nursing* 39, no. 5 (2010): 511.

Although this disorder was given a name and classified during the early modern era, there was little the midwives and physicians could do if a woman showed symptoms of eclampsia. In fact, the only remedy was that mentioned above: the delivery of the child. Therefore, when a woman started having seizures the midwife or physician would need to make a difficult decision. They knew that if the mother died while the child was still inside of her, then it was very likely that the child would die as well. However, the one process that could quickly deliver the baby in such a situation meant certain death to the mother, the cesarean section.

While the cesarean section had existed for centuries as a means to remove a living child from the womb of a dead woman, by the early modern era there still was not any definitive proof that a woman could survive such an operation. The only evidence that this was possible were myths such as that which said Julius Caesar himself had been born in such a manner, providing the name for the procedure, and that his mother survived.<sup>509</sup> Because it was known that a woman could not survive such an operation, cesarean sections were only permitted to be done once the mother had died, or was in severe danger of dying.<sup>510</sup> As early as the mid-seventeenth century the authors of the manuals claimed that such an operation could be carried out safely on a living woman, but they did not recommend their readers to carry out such an operation unless the mother was deceased.<sup>511</sup>

According to Jane Sharp and Jean Astruc, it was the work of a Frenchman by the name of Francis Rousset that made the idea of a survivable cesarean section possible. Rousset justified the surgery by pointing out that female animals were often spayed in an operation in which the uterus of the animal was removed through cuts in the belly similar to those in a cesarean

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<sup>509</sup> Astruc, 198-199.

<sup>510</sup> Culpeper, 1662, 184, 185.

<sup>511</sup> Chamberlen, 151.

section.<sup>512</sup> He also argued that in the past women had been seriously wounded in the peritoneum and lower belly and yet recovered from their injuries.<sup>513</sup> Yet for the most part the manuals did very little to discuss how a physician would perform a cesarean section, even in the event of the mother's death. Midwives and pregnant women were the primary audience for these books, and to include a chapter in which a woman was cut open and had her child taken from her belly would have been traumatizing for the pregnant woman and of little use to the midwife. If a woman in labor was dying, the manuals instructed the midwife call a surgeon to come and try to save the child the moment the mother died and not before. Only when man-midwives, who had professional training, became more common in the birthing room at the end of the early modern era did the directions for performing this surgery appear in the manuals.

In his 1767 manual *The Art of Midwifery Reduced to Principles*, John Astruc discussed how a cesarean section was to be performed on a living woman, though there was still no record of a woman surviving the operation at this point. Astruc wrote that the cesarean section was the one of the most dangerous surgeries and should only be performed if the mother or child's life was in danger.<sup>514</sup> Astruc then gave a more detailed description than other writer regarding how the operation would be performed. If the surgeon intended to operate on a woman still living the first step was to position her with her belly raised while several other people held her arms and legs to prevent her from thrashing about when the surgeon began cutting her open. Once the surgeon was sure the woman was well-secured, he would make a cut six to seven inches long on the side of the body which the uterus was most inclined. The surgeon would then make an incision five to six inches long in the uterine wall while being careful to avoid cutting the infant within. The surgeon would remove the child and afterbirth at the same time so the operation

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<sup>512</sup> Astruc, 202-203

<sup>513</sup> Sharp, 197.

<sup>514</sup> Astruc, 194-195.

would not last any longer than necessary. After the surgeon had delivered the child, he would wipe up the blood, leave the uterus to heal on its own,<sup>515</sup> and then stitch the woman's abdomen back to together with two or three stitches. Once the physician stitched her up the woman was to be put in bed, laying on the side on which the cut had been made and given a weak cordial.<sup>516</sup>

While Francois Mauriceau claimed that women told stories of other women who had undergone such an operation, survived, and even given birth safely in the future,<sup>517</sup> there was not any concrete proof at the time to demonstrate this was possible. A woman who needed this surgery had to face the possibility that she might not be able to become pregnant again, and even if she did that she might be required to go through the torture of surgery once more. At the same time, the woman's husband would have to decide if the surgery was a wise choice given the odds of survival. A physician would have a difficult choice to make when deciding to have a living woman undergo such a procedure as it could have ramifications not just for the woman and child she was carrying, but for her entire family.

### **Lying-In**

Once a woman delivered her child and the afterbirth, whether naturally or with assistance, she began what was known as the lying-in period. The lying-in period was intended to allow the woman to rest and recover from her ordeal, and the length of it varied from author to author and woman to woman. This length of time was based on how long it took the lochia, or postnatal uterine discharge, to have stopped, how the woman felt, or whether the child she had given birth to was a boy or a girl. As Jane Sharp wrote in her manual "Women are as in as great danger if

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<sup>515</sup> This act in and of itself would be enough to kill the woman as the uterus would not heal properly and become infected.

<sup>516</sup> Astruc, 195-197.

<sup>517</sup> Mauriceau, 278-279.

not more, after the young is born.”<sup>518</sup> Because of the fear of “childbed” or puerperal fever and other maladies which could strike a newly delivered woman, those who assisted the new mother took special care in how they treated her in the days and weeks after giving birth in order to keep her healthy and allow her to recover after her ordeal.

Some of the manuals used in this study based the length of the lying-in period on how long it took for the woman’s purgations to be completed. While some authors wrote that this would take between thirty and forty days, Francois Mauriceau instructed his readers that most women were “cleansed” sufficiently between two and three weeks after giving birth.<sup>519</sup> Leah Astbury countered that although a woman’s purgations may have ended, the woman may not have felt herself to be well and might have extended her lying-in until she felt she had sufficiently recovered and was able to take back over the household duties from which she had been exempt during her lying-in.<sup>520</sup>

The final guidelines concerning the length of a woman’s lying-in was based on the gender of the child she had given birth to. Peter Chamberlen wrote that if a woman had given birth to a boy, her lying-in period would last thirty days, but if the child was female then it would last forty.<sup>521</sup> Sarah Read claimed that this difference in time was based on the belief that since it took longer for a female child to develop, it would take longer for the mother to heal following delivery.<sup>522</sup> Although there were variations in the length of time prescribed by early modern writers, they all agreed that a woman needed a certain amount of time to rest and recuperate after

<sup>518</sup> Jane Sharp, in Elaine Hobby, ed., *Midwives Book, Or the Whole Art of Midwifery Discovered* (Oxford: Oxford University Press, 1999) 167.

<sup>519</sup> Mauriceau, 299.

<sup>520</sup> Leah Astbury, “Being Well, Looking Ill: Childbirth and the Return to Health in Seventeenth-century England,” *Social History of Medicine* 30, no. 3 (2017), 501.

<sup>521</sup> Chamberlen, 124.

<sup>522</sup> Read, 105. While the Bible says in Chapter Twelve of Leviticus that a woman who has given birth to a child is unclean for a longer period of time than one who had given birth to a boy, the lengths of time given are sixty-six and thirty-three days respectively.



giving birth. The authors instructed their readers about what the proper care was for a woman during this time, ranging from diet to sleep to bathing. It was important for the woman and those around her to follow the instructions provided; readers believed deviating from them could cause the mother harm or even death.

As soon as the midwife had delivered the mother of her child and the afterbirth, the manuals instructed that the woman should be cleaned up and placed in her own bed, though how they were cleaned up varied. William Sermon wrote that a clean sponge or linen cloth which had been washed in warm water should be placed at the entrance to the vagina so that cold air would not be able to enter the body.<sup>523</sup> William Smellie wrote in 1762 that the woman should not only be bathed, but should change into warmer clothing before being put into her bed.<sup>524</sup> Similar to the complications cold air supposedly caused during delivery, if a woman was exposed to cold air after giving birth, the authors wrote that it would cause the lochia to become stopped up and prevent it from being evacuated, leading to health problems or death as will be discussed later. Over the course of the sixteenth, seventeenth, and eighteenth centuries physicians and midwives warned of the effects of cold air on the woman's body and sought to ensure that the newly-delivered woman would not become susceptible to postnatal complications.

One of the more unusual instructions regarding how the woman should be treated immediately after giving birth appeared in both the sixteenth and seventeenth centuries. According to these authors once the secundine, or afterbirth, had been delivered, the midwife was to lay the woman on the skin of a sheep or rabbit which had been skinned alive and was still covered in its blood. The woman was to lay on this gory blanket for an hour in the summer or two hours in the winter in order to help close up the dilated womb and chase away any bad

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<sup>523</sup> Sermon, 105.

<sup>524</sup> Smellie, 204-205.

blood.<sup>525</sup> Not only was this treatment especially messy but could only be afforded by those who had an extra sheep or rabbit they could slaughter at the time of delivery. Only one author during this time spoke against this treatment, Francois Mauriceau. He wrote that this could possibly do more harm than good as after a while the blood would grow cold and cause the woman to shake, which would delay the healing process.<sup>526</sup> It is likely that this treatment was a folk belief from the Middle Ages which began to lose its popularity in the eighteenth century as knowledge about the human body proved it ineffective and the general use of animal parts in treatments fell out of favor.

For the most part the manuals used in this study gave general advice concerning how the woman was to be treated during her lying-in period with few directions based on specific milestones. These general directions were divided into six main categories, similar to the non-naturals mentioned in the sections on prenatal care and pregnancy. The first of these categories concerned the proper diet for a woman recovering from childbirth. One interesting comparison between the manuals was that which compared a newly delivered woman to someone who had been ill or had been wounded in some manner. For example, Francois Mauriceau wrote that at the beginning of the lying-in period the new mother should only eat foods which a person with a fever might eat.<sup>527</sup> Thomas Chamberlayne and the anonymous author of *Aristoteles Master-piece, or the Secrets of Generation* wrote that the newly-delivered woman be fed in a manner similar to someone who had received a wound, though neither author explained what this meant.<sup>528</sup>

<sup>525</sup> Chamberlayne, 88; Chamberlen, 122; Anonymous, *Aristoteles Master-piece or The Secrets of Generation*, 156.

<sup>526</sup> Mauriceau, 292-293.

<sup>527</sup> Mauriceau, 296.

<sup>528</sup> Chamberlayne, 129; Anonymous, *Aristoteles's Master-piece, or The Secrets of Generation*, 158.

The first manual to provide instructions regarding the proper diet was Nicolas Culpeper in 1651. In his manual Culpeper wrote that the food given to the woman should be hot, though she should only be given a little at a time. According to Culpeper, these instructions were contradictory to what midwives advised as they believed the large amount of blood loss during parturition warranted more eating. However, Culpeper argued that since the blood lost during this time was superfluous, the woman did not need to eat a lot of extra food in order to regain it.<sup>529</sup> The only author who seemed to give credence to this theory regarding blood loss was Jane Sharp. However, while she also stated that the woman should not eat too much at once, she advised new mothers to eat often in order to replace the lost blood.<sup>530</sup>

Although the other authors did not use the same argument regarding blood loss when addressing the woman's diet, they did write that the woman should not be allowed to eat too much as it could cause a variety of problems. One such problem was that overeating could cause an overproduction of milk, or mastitis, which would make the milk curdle in the breast.<sup>531</sup> Several other authors wrote that overeating could cause the woman to have a fever and so the midwife was to only allow the woman to have small meals until the threat of a fever had passed, which was around the tenth day following delivery.<sup>532</sup> The author who was most specific in this regard was Francois Mauriceau, who wrote that a woman should only be allowed to eat two-thirds of the amount of food she ate before. Even at the end of the early modern era William Smellie wrote that it was better to err on the abstemious side than to allow the woman to overindulge herself and cause a fever.<sup>533</sup> Concern regarding new mothers and fevers was

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<sup>529</sup> Culpeper, 1651, 191.

<sup>530</sup> Sharp, 230

<sup>531</sup> Anonymous, *Aristoteles Master-piece or The Secrets of Generation*, 158-159.

<sup>532</sup> Chamberlayne, 129.

<sup>533</sup> Mauriceau, 296; Smellie, 392.

mentioned frequently because puerperal fever was one of the greatest causes of maternal death in the weeks after giving birth, though the cause for this would not be discovered until the 1840s.

An unusual recommendation regarding a woman's diet in the early modern era was that of the woman's own blood. In 1671 William Sermon wrote in his manual to "Take 20 or 30 drops of the freshest of her own flowers, and give it her to drink in red Wine, or in the broath of a Hen."<sup>534</sup> While some readers may take this to mean the midwife was to pick fresh flowers to place the in a woman's beverage, this interpretation is unlikely. In the early modern era the term "flowers" was used to describe the woman's menstrual cycle and in the midwifery manuals used in this study the term "flowers" was only used in this manner unless there had been a qualifier, such as particular type of flower, included with it. As this manual only used the term "flowers" and did not include such a qualifier, it is highly likely that William Sermon instructed the midwife to give the newly delivered woman her own blood as part of the healing process.

What makes this treatment so unusual is that it takes a beneficial view of menstrual blood when many physicians believed it to be unclean. Patricia Crawford has shown in her research that many physicians of the early modern era purported that menstrual blood had the power to wither vines, kill grass, and blunt knives just from being near a menstruating woman. They also held that if a dog tasted a woman's menstrual blood then it would be driven mad.<sup>535</sup> The widespread of beliefs such as this make it unusual that a physician would prescribe for a woman to consume her lochia as a means of aiding in the healing process. However, the lack of this remedy appearing in any other manuals during this time indicated that it was not commonly used, though the difference in prescription and practice is unknown due to a lack of sources.

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<sup>534</sup> Sermon, 151. This remedy was not meant to be part of the woman's regular diet postparturation, but as a remedy to an overabundance of lochia.

<sup>535</sup> Patricia Crawford, *Blood, Bodies, and Families in Early Modern England*, (London: Pearson Education Limited, 2004), 28.

After describing the proper diet for a newly delivered woman, the manuals prescribed an appropriate amount of rest and exercise for the new mother. Adrian Wilson's research revealed that lying-in consisted of three stages based on how much the mother was allowed to exercise. The first stage had the mother confined to her bed for anywhere between three and fourteen days, based on the mother's perception of her own strength and recovery. The next stage, called the "upsitting" allowed her to get out of bed, but still remain in the room and lasted between a week and ten days. The final state allowed the woman to walk around her home, but did not allow her to go outside, and this too lasted between a week and ten days.<sup>536</sup> The earliest author who provided these instructions wrote that the woman was to stir as little as possible during the first week of her lying-in period and was to talk as little as possible as the act of talking would weaken her.<sup>537</sup>

This ability to properly rest may have been difficult in some cases as pointed out by Francois Mauriceau in the days when children were baptized a couple of days after being born. Baptism was a time of celebration and involved many people coming into the childbed room, preventing the mother from getting the rest she needed.<sup>538</sup> Although Mauriceau was writing in France, prior to the English Reformation it is likely that such practices would have been similar in England at this time, even after the break with the Roman Catholic Church and Elizabethan Settlement in the sixteenth century.

In order to help the woman rest during the first week of her lying-in period, she was to be kept free from all disturbances, noises, and distressing news as the lack of rest caused by these could prevent the necessary excretions during that time which could lead to severe problems

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<sup>536</sup> Wilson, 75-76.

<sup>537</sup> Culpeper, 1651, 195.

<sup>538</sup> Mauriceau, 299.

including death.<sup>539</sup> To make the childbed room as quiet as possible, William Smellie recommended that hinges on doors and shutters be oiled and carpets put down on the floor when making the room ready for the birthing process.<sup>540</sup> While many of the manuals gave advice regarding rest during the first week of her lying-in, after that time, the manuals did not address the lying-in period any further regarding sleep or exercise. One possible reason for this was that these manuals were written for the use of midwives who would not have been at the house for the whole of the lying-in period, but instead until the mother felt well enough for the midwife to leave.<sup>541</sup>

While the authors of the midwifery manuals did not recommend the woman to bathe often during her pregnancy, some of them recommended for her to bathe or be bathed everyday of her lying-in. These were not immersive baths, but more like a sponge bath which would be done while the woman laid in bed or as time passed it would be done by the woman herself. Most of the manuals which discussed this matter instructed the woman to be bathed for the first eight days with water which had chervil and a mixture of rose extract and honey boiled in it. The authors believed the ingredients used in this recipe both cleansed and healed the genitals of the woman, drew down the lochia, and reduced inflammation.<sup>542</sup> For the second eight days of her lying-in the woman was to bathe her privities with a mixture of water, wine, and province roses.<sup>543</sup> The third and final stage was to take place for four days following the previous stages and told the woman to bathe herself with a mixture of water, province roses boiled in wine and

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<sup>539</sup> Chamberlayne, 131; Sharp, 230; Smellie, 395-396.

<sup>540</sup> Smellie, 392.

<sup>541</sup> Astbury, 507.

<sup>542</sup> Chamberlayne, 95; Sharp, 229.

<sup>543</sup> Chamberlen, 176; Anonymous, *Aristoteles Master-piece or the Secrets of Generation*, 167-168.

myrrh water.<sup>544</sup> After these three stages, the authors do not recommend any further bathing as so it is possible that at this time the new mother would return to her normal bathing habits.

Other authors tended to focus on bathing as an event which was to take place towards the end of the lying-in and as a way to prepare her to return to society. Mauriceau wrote that the woman may bathe one or twice towards the end of her lying-in and Jean Astruc wrote that a woman was not to bathe herself until after the fortieth or fiftieth day, though neither author listed any specific herbs to use.<sup>545</sup> A possible reason for this is that these authors intended for their readers to follow their normal bathing habits at this point in time as there would not be the pain, inflammation, or purgations which would require the use of specific herbs. Although these ingredients might not have been used in all cases of bathing, they were commonly used for the treatment of pain and in various ways, though frequently the herbs were mixed and made into a plaster or ointment which the woman or midwife would apply to the areas which caused the woman pain. One such recipe instructed the woman to throw bayberry powder onto hot coals and to receive the fume produced from this into her womb.<sup>546</sup> Another recipe called for the woman to anoint her stomach with a mixture of almond or walnut oil, rue oil, and dill.<sup>547</sup>

The use of various materia medica was not the only way that a woman might help relieve any pain she felt after giving birth. One such method advised the woman to keep her belly hot,<sup>548</sup> and although the manual did not provide a reasoning for this it is likely that the heat would help relax the uterine muscles which would be constantly contracting in the first days after childbirth.

The most unusual idea as to how to treat postnatal pains was that mentioned in Peter Chamberlen's manual where he wrote that a physician by the name of Guillaume Rondelet or

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<sup>544</sup> Chamberlayne, 101; Anonymous, *Aristoteles Master-piece or the Secrets of Generation*, 167-168.

<sup>545</sup> Mauriceau, 300; Astruc, 71.

<sup>546</sup> Sharp, 232.

<sup>547</sup> Sermon, 162.

<sup>548</sup> Sermon, 162.

Rondeletius, a French professor of medicine in France in the sixteenth century, instructed the woman to dry and eat her afterbirth. According to Rondeletius it was for this reason that animals ate their own afterbirth, though Chamberlen disagreed with him on both points.<sup>549</sup> As this theory appeared in only one manual it can be deduced that it was not a popular treatment of the early modern era, especially as it bordered on cannibalism.

The first week after the woman had given birth, the midwife would carefully monitor the woman's recovery to ensure that she was not getting a fever that could lead to the death of the new mother. Not all fevers were deemed the same in the early modern era and one type of fever was considered a normal part of the child-birthing process. The authors described "milk fever" as a fever which occurred between the third and tenth day following parturition as a result of the movement of the blood from the womb to the breast to make milk.<sup>550</sup> Even after anatomists discovered that there were not any blood vessels which ran from the womb to the breast or that blood did not turn into milk at all, the manuals still addressed this type of fever, but changed their idea as to what caused it. Because a fever experienced in the days after giving birth could cause a new mother to panic for believing her life to be in danger, it was important for a midwife to reassure her patients that this fever, experienced by a large number of women, was not dangerous to her health.

However, the authors told their readers to beware any other fevers. Most fevers were regarded as dangerous, and the authors tried to provide their readers with as many possible ways to treat fevers. Some of the treatments were those used for any type of fever, not just those connected with childbirth, such as bloodletting, scarification, cuppings, and if the woman was

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<sup>549</sup> Chamberlen, 133.

<sup>550</sup> Culpeper, 1662, 198-199.



strong enough, purges.<sup>551</sup> Other medicinal treatments called for the use of such *materia medica* as endive syrup, maidenhair, succory, violets, cinnamon, or garlic.<sup>552</sup> Finally some authors used diet-based remedies to try and treat the fever with such foods as oatmeal caudle.<sup>553</sup> Unfortunately, as the real reason for the fever, bacterial infection, was not known at this time, these treatments would likely have proven ineffective.

After a month had passed following the birth of her child, a new mother would look forward to the churching ceremony and its social implications. If possible, during her lying-in the woman would abstain from all worries, cares, household responsibilities, and wifely duties and focus solely on recovering from the birthing process. For those who were able to do so, the churching marked the end of this month of privilege and the woman's return to actively participating in her home once again.<sup>554</sup> This was not the only meaning to the churching process as some parts of society considered the woman to be unclean from having given birth, and the lying-in period was a time in which she should not be allowed in church nor be given Eucharist.<sup>555</sup> At the end of the predetermined period the woman would attend a special church service in which she would be blessed, receive communion, and be considered clean once more. This event played an important part in a woman's life as it marked her return not just to church, but to society in general as it was only at this time could she leave her house once more and begin sexual relations with her husband again. Surprisingly, while the manuals used in this study addressed the lying-in period, they seem to have completely separated it from the religious aspect of churching and instead only looked at the lying-in period as a part of the return to health.

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<sup>551</sup> Culpeper, 1662, 198-199.

<sup>552</sup> Chamberlen, 181-182.

<sup>553</sup> Wolveridge, 123.

<sup>554</sup> Cressy, 203.

<sup>555</sup> Cressy, 203.

At the beginning of the early modern era the churching ceremony was a Roman Catholic Mass which consisted of such practices as the priest meeting the woman at the church porch and sprinkling her with holy water before allowing her to enter the church, the reading of Psalm 121, a psalm of praise and thanksgiving, and a celebration of Eucharist followed by a banquet or party.<sup>556</sup> The ceremony itself was changed with the founding of the Anglican Church and the creation of a new Book of Common Prayer in the second half of the sixteenth century. While the previous ceremonies had used the practices such as the sprinkling of holy water and a reference to cleansing the woman with hyssop, an herb commonly used to clean the vestments worn by the clergy, at the time of the Reformation these practices were labeled as “popish” and discarded. Whereas prior the ceremony had been called “the order for the purification of women,” in 1552 the ceremony was renamed “the thanksgiving of women after childbirth,” though in both cases the families would hold a large celebratory party following the ceremony.<sup>557</sup>

The Reformation was not the only time the practice of churching changed. It was constantly adapted throughout the early modern era and was officially banned during the Civil War and Commonwealth period between 1645 and 1660.<sup>558</sup> Once the practice returned it did not simply go back to what it had been prior to Oliver Cromwell’s rise to power as some families began to move away from the Church of England or sought to move this celebration from the public sphere to the private one held in the home with close family and friends.<sup>559</sup> Whether a woman chose to participate in the churching ceremony at the beginning of the sixteenth century as a part of the Roman Catholic Church or had a small celebration in her home towards the end

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<sup>556</sup> Cressy, 206, 209, 201.

<sup>557</sup> Cressy, 205.

<sup>558</sup> Cressy, 225.

<sup>559</sup> Cressy, 227.

of the eighteenth century, the outcome was the same. The woman's period of isolation from the world was officially over and she could return to her life as she had lived before.

Once the woman had made her return to society the circle of life would continue as the woman would not only return to society, but to her marriage bed as well. At this point the process regarding conception, pregnancy, and childbirth would start once again and the woman would turn once more to the midwifery manual she had previously used to enable her to once more successfully conceive a child, carry it to term, be safely brought to childbed, and finally recover from the subsequent delivery.

### **Conclusion**

The sixteenth, seventeenth, and eighteenth centuries were a time of great change in England, religiously and medically. While the break with the Roman Catholic Church may not have physically impacted the way a woman dealt with childbirth, evidence suggested that it certainly changed how she might have perceived the process her body was going through. Whereas prior to the English Reformation women could look to their saintly counterpart, the Virgin Mary, while giving birth and ask her to intercede for them in their time of suffering. After giving birth the woman could look to the religious service of churching as her reintroduction into society and purity. Women after the English Reformation, however, had only a masculine God with which to send their prayers during childbirth and a less celebratory return to her former life after her travail.

The advancements in knowledge about the human body allowed midwives and their new male counterparts to better understand the process of childbirth and to help women going through such a process. While often depicted in a negative manner, the entrance of men into the

female dominated birthing chambers who had the access to a better education regarding obstetrics helped to save the lives of many women and children over the course of the early modern era. The entrance of men onto the childbirthing scene was not the only step of progress as the invention of new tools and procedures, such as obstetrical forceps and the cesarean section, helped to deliver women who would have likely died in childbirth along with their baby in centuries prior. While overall the birthing process may seem to have changed little over the course of 300 years, those changes which occurred made all the difference.

## Conclusion

This thesis traced developing medical understandings and prescriptive approaches to conception, pregnancy, and childbirth in England between 1500 and 1770. It offers insight into how English practices and traditions regarding the field of obstetrics developed and evolved in response to medical, scientific, and religious transformations that took place over the course of the early modern era. The study of twenty-nine medical manuals published in England during the early modern era revealed that developments made in the fields of science, medicine, and religion, combined with the emergence of print culture and rising literacy rates, had a profound influence on the way physicians and other authors of medical manuals prescribed advice to women who were trying to become pregnant, were already pregnant, or were about to give birth.

The early modern era was a time of great change for the people of England. Between the sixteenth and eighteenth centuries England was ruled by four different dynasties, experienced the Reformation, the Civil War, the Commonwealth, the Glorious Revolution, and the Scientific Revolution. During this time a woman's place in the world was defined by who she married and to whom she gave birth. A woman who was unable to give birth to an heir for her husband would likely have been viewed by her family as a failure as there would be no one to inherit the family name and property. Because their reproductive cycles played such a critical part in women's lives, booksellers and practitioners understood the need for medical manuals to advise the literate public on the various components of the female reproductive cycle such as conception, pregnancy, and childbirth. As practitioners learned about new discoveries in the medical world, they would either edit existing obstetrical manuals or write new ones in which to include the new information.

While there have been numerous books which focus on the social and religious changes occurring in the early modern era regarding pregnancy and childbirth, there is only one which focuses solely on how the field of obstetrics changed over the course of the early modern era in response to developments made in the field of medicine. Knowing how the field of obstetrics changed in response to medical developments allows historians to be able to determine how long it took medical discoveries to reach England from the Continent and then from the educated elite to the more general public.

While the early modern era experienced a great number of transformations regarding human anatomy, the creation of new medical fields and instruments, and the expansion of men in the birthing chamber, other aspects of obstetrics experienced very little change if at all. For example, as anatomists discovered the differences between male and female bodies, the advice presented in obstetrical manuals evolved to show the changing ideas regarding conception, what men and women contributed to the formation of a fetus, and what happened during conception. Physicians corrected the works of the Ancients whose opinions had been held in high regard for over a thousand years. At the same time, however, some physicians struggled to revise and replace the knowledge of the ancient authors concerning the reproductive process, because Galenic medicine formed the very foundation of their understanding about the human body.

Authors of early modern medical manuals anticipated that some women who sought to conceive would nonetheless fail to become pregnant. Initially the failure to conceive was blamed on the woman, but after the discovery of spermatozoa in the seventeenth century physicians began to argue that a woman's husband might be the reason for her barrenness. While women were no longer held in complete fault for their barrenness, the reasons for barrenness changed little over the early modern era with one exception: barrenness because of malevolent

supernatural means as the idea that someone in league with the Devil or a demon could prevent someone from becoming pregnant fell out of favor.

One aspect of obstetrics that experienced little change over the course of the early modern era was that of prenatal care. This care was focused not only on what the expectant mother ate, drank, and did physically, but also on what she exposed herself to in regard to sounds, sights, and emotions. As there were not any major discoveries made regarding what helped or harmed the child in the womb, practitioners were likely concerned with changing information which had worked for generations.

At the same time however, advancements regarding the development of the fetus were affected by the emergence of the field of embryology and the invention of the microscope, both of which allowed physicians to dissect and examine the various stages a fetus went through over the course of its gestation. For the most part however, these investigations took place on animals because pregnant human corpses were hard to come by. Hands-on investigations allowed physicians to answer such questions as what role the amniotic fluid played for the fetus in utero and how the fetus obtained its nourishment during the pregnancy.

Although physicians made great strides in understanding the development of the fetus in utero, they did not have the same success in understanding what made a woman miscarry her pregnancy. Physicians' knowledge was limited to telling readers when a woman was most likely to suffer a miscarriage, and how she could prevent a miscarriage from occurring. Beyond this there was little for the woman to do but take care of herself and pray that she carried the fetus to term.

Prior to the Reformation, women in labor often used religious icons, paraphernalia, and connections with the Virgin Mary to help them through their time of travail. When England

broke from Rome for the last time during the reign of Elizabeth Tudor, the church in England no longer considered these items and beliefs to be valid and instead told women to rely on prayer to a male God who could not understand their plight. In addition to removing Catholic items from the birthing chamber, the Church of England also forbade midwives to baptize infants and some denominations of Protestantism did not believe in infant baptism at all.

For the small number of births which required more help than a natural birth, it was important for the midwife or physician to have the skills and tools necessary to save the lives of both mother and child. The invention of obstetrical forceps in the seventeenth century helped save the lives of numerous women and their children who would have died otherwise. Although the first caesarean section in which the mother survived did not occur in England until the nineteenth century, physicians in England began to include this operation in their midwifery manuals as surgeons elsewhere in Europe declared it could be done successfully based on their own personal observations and experiences.

Once the woman had given birth, she was not out of danger as postnatal infections were still a very real possibility, though there was little change regarding how a woman was treated during this month. Once the woman had sufficiently recovered from giving birth she was reintroduced to society through a ritual traditionally known as “churking.” While originally this was a Roman Catholic practice which purified the mother from the uncleanness of the birthing process, after the English Reformation the Church of England changed it to a ceremony of thanksgiving for bringing the mother out of danger.

This thesis has demonstrated that medical ideas do not always spread quickly and advancements in medicine and science took anywhere from decades to a century to appear in midwifery manuals. The original publication of discoveries in Latin or other European languages



made it harder to spread new information to the general public. It was not until educated elites took the time to read these texts in their original language and translate them into English that new knowledge and practices could appear in medical manuals such as those used in this study. Furthermore, this study has shown that as medical knowledge advanced, folk practices and beliefs which had once been commonly held began to fall out of favor. These included the use of animal parts to enhance a couple's chance of conceiving, practices to rectify barrenness by means of witchcraft, and the practice of carrying an eagle stone to help prevent a miscarriage. As physicians began to base their claims of treatment on eye-witness observations and scientific methods, these traditional items and practices fell out of use because the physicians stated that they had not seen folk remedies work or achieve their stated goals.

Based on the results of this thesis, which provided close reading of published medical manuals available in electronic databases, a great deal more work remains to be done in the field of early modern obstetrics. For example, areas which were touched on briefly, such as the impact of religious changes on practices regarding infant baptism or the churching ceremony, could be extended and researched further in-depth through analysis of additional primary evidence. Another area in which this study could be continued or expanded is using additional manuals to further support, or possibly contradict, the conclusions presented in this study. Moreover, the use of other primary sources, such as manuscript journals, commonplace books, and letters could possibly reveal how closely women of the early modern era followed the advice prescribed in the manuals. The field is therefore ripe for further analysis of how these medical manuals may have been used and what impact the information presented in them had on a woman going through her reproductive process.

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### Vita

Victoria Elizabeth Crispin Crane Glover was born on December 29, 1990, in Emporia, Virginia. She graduated from Appling County High School in Baxley, Georgia, in 2009. She received her Bachelor of Arts in History from Georgia Southern University in 2013 and a Master of Arts in Teaching Secondary History in 2015.