The Live Chicken Treatment for Buboes:

Trying a Plague Cure in Medieval and Early Modern Europe

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SUMMARY: This article traces a seven-hundred-year history of one puzzling treatment for plague buboes that used the rumps of chickens to draw out the bubo’s poisons. It traces the origin of the recipe to Avicenna’s Canon and explores how medieval and early modern physicians altered the treatment and explained its workings up to the early eighteenth century. Much of the analysis focuses on the variants of the recipe that German physicians created as they adapted or elaborated on older recipes. This article argues that most variations of the treatment likely resulted from physicians trying ideas on paper, rather than in practice, as they attempted to unlock the mysteries of the plague’s underlying poisons. Starting in the sixteenth century, however, evidence suggests that practice began to play an important role in the adaptation and interpretation of the “live chicken” recipes.

KEYWORDS: poison, bubo, chicken, German physicians, Avicenna, recipe, empirical practices, plague medicine
One of the most intriguing plague treatments of late medieval and early modern Europe calls for applying the rumps of live chickens to a bubo in order to draw out poisons. The Augsburg physician Ambrosius Jung offered a common version of this “live chicken” treatment in his printed plague treatise of 1494:

Some take young roosters, one after the other, with the feathers plucked from around the hole in the backside. Place the rooster’s rump on the bubo until the rooster dies. Repeat with another rooster until one survives.¹

Historians cannot dismiss this treatment, as strange as it sounds, as simply bizarre due to its prevalence and longevity within the plague treatises composed by physicians between 1348 and the eighteenth century. It appeared throughout Europe from England to the Ottoman Empire and achieved such status in the sixteenth century that it was “appropriately advised and praised by all doctors,” according to one south German physician.² The “live chicken” treatment was also more than just a thought experiment, since it entered medical practice by the sixteenth century, if not earlier. Despite a long trail of evidence, historians have not investigated the treatment’s origin, workings, and longevity. Its history, however, sheds light on the thought and practice of physicians as they tested and altered traditional recipes for a new era of plagues after 1348.

This article traces a seven-hundred-year history of the “live chicken” treatment, starting with Avicenna’s *Canon of Medicine* of the eleventh century and ending in the eighteenth century as plague disappeared from Western Europe. This investigation has three goals: (1) to explain the origin and workings of the “live chicken” treatment within the context of contemporary medical thought, (2) to interpret the many novel variants of
the treatment that arose during these many centuries, and (3) to assess the treatment’s relationship to practical medicine, especially as this relationship seems to change over time. This article argues that most variations of the treatment likely resulted from physicians trying ideas on paper, rather than in practice, as they attempted to unlock the mysteries of the plague’s underlying poisons.\(^3\) Even though this way of trying cures was speculative, it added a dynamic element to late medieval and early modern plague treatises, as physicians drew on philosophical reasoning to venture new ideas about old recipes. Starting in the sixteenth century, however, evidence suggests that practice began to play an important role in the adaptation and interpretation of the “live chicken” recipes, as physicians referred more frequently to their own experience and altered the recipes to make them more practical or affordable. At this time physicians also began to emphasize the mild heat of the chicken as the power behind the treatment’s efficacy. In a final attempt to demonstrate that the “live chicken” recipes were not so bizarre, the last section explores the striking similarities between early modern and modern bubo treatments. This investigation draws on a broad set of plague treatises from Western Europe, but often focuses on texts from German-speaking lands in order to utilize neglected sources and to gain a deeper glimpse into one region.

Origins

In exploring how physicians tested and tried the medicines of the past, historians should keep in mind the broad range of *materia medica* that existed in recipes. Sometimes the medicine in question was a live chicken, or even a different living bird or animal.
Although historians often cite the “live chicken” remedy to illustrate the seemingly bizarre side of early plague medicine, this recipe surprises only the people who are distant from the barnyards and folkways of the past.\textsuperscript{4} Domesticated chickens had spread to many parts of the world in ancient times and became integrated into early medical traditions.\textsuperscript{5} For example, in the \textit{Canon of Medicine}, Avicenna (ca. 980–1037) praises chicken broth, since it “tempers the humors strongly.”\textsuperscript{6} Such praise mimics similar statements made earlier by Dioscorides during Roman times, and undoubtedly many other ancient authors.\textsuperscript{7} In addition to medical explanations based on Galenic humors, some early healers recommended chickens and chicken products for their alleged antidotal qualities. Such views seem to be derived from the fact that chickens could withstand a seemingly harmful diet consisting of morsels from the ground that were associated with poison and putrefaction, such as insects, worms, weeds, and kitchen waste.\textsuperscript{8}

Some of the earliest evidence of a “live chicken” treatment comes from Avicenna. In book 2 of \textit{Canon of Medicine}, Avicenna recommends a cut chicken to cure poisonous bites, hereafter referred to as the “cut chicken” treatment: “Hens or roosters, cut open above their hearts, are placed on the spot struck by venomous maggots/worms. Change it in about an hour and it prevents the damage of the poison.”\textsuperscript{9} Very similar directions involving a cut hen or rooster appear later in book 4, again on treating poisonous stings and bites.\textsuperscript{10} However insignificant this recipe is within the broad scope of the \textit{Canon}, these terse comments inspired a long tradition within later plague medicine.
Even though Avicenna did not offer a theoretical explanation of how the “cut chicken” treatment works, closer attention to his larger theoretical framework on poisons and antidotes provides some clues. In the Canon and other works, Avicenna largely adopted Galen’s theories on poison, thus bringing new emphasis to Galen’s idea that poisons worked through their “total substance.” Here Galen reasoned that some substances were so harmful to the human body that they operated through their “total substance” rather than through their effect on the body’s humors. Thus poisons operated in a way that was unlike most things that affect the body. Although Avicenna refers to chicken broth as tempering the body’s humors earlier in the Canon, it is possible that he also believed chickens to work against the “total substance” of the poison rather than through strictly humoral action. In any case, Avicenna’s “cut chicken” treatment suggests that he believed that chickens had special antidotal powers that could somehow counter the power of the poison. Figuring out how exactly chickens countered the poisons in plague buboes became a topic of great interest later.

While Avicenna’s words on the “cut chicken” treatment did not make an important contribution to medical theory, it became influential as a recipe among medieval and early modern physicians. Despite Avicenna’s numerous contributions to theory, and especially to the philosophy of testing medicine, one less explored side of the Canon is its role as a recipe book during later centuries. Since much of the Canon provides practical information, it is no surprise that Avicenna’s work served as an important collection of recipes. As later physicians sought to apply and adapt Avicenna’s recipes, the Canon inspired much testing and trying of recipes, of which the “cut
chicken” recipe is just part. In this way, the Canon played an important role in both medical practice and theoretical speculation, much like the European collections of experimenta and secreta. Moreover, the division between canonical medical texts and anonymous medical knowledge was also fluid over time. Some later physicians did not cite Avicenna as the origin of the “live chicken” treatment, such as the Brandenburg physician Ernst Reuchlin. His 1565 plague treatise described the “live chicken” treatment as an “Experiment,” thus placing it within the anonymous tradition of experimenta.

Other physicians, however, were aware of Avicenna’s role in the history of this recipe, such as the fifteenth-century Iberian physician Valescus de Taranta and the sixteenth-century German physician Jacobus Theorodus.

The central role that Avicenna’s Canon played in medical education and practice in medieval Europe helps to explain the wide distribution and longevity of the “cut chicken” treatment. There was also continued interest in poisons and antidotes in the centuries leading up to the Black Death, particularly among Arnau de Vilanova (1235–1311) and Pietro d’Abano (ca. 1257–1316), who wrote important texts on the subject. These authors elaborated on Galen and Avicenna’s ideas about poison, thus sustaining the broader theoretical framework for understanding poisons into the later Middle Ages.

Their works also maintained interest in Avicenna’s antidotal recipes, since Arnau de Vilanova and the physician Niccolo Bertucci (d. 1347) both included Avicenna’s “cut chicken” recipe in their discussion of treating poisoned wounds. Even though the onset of the Black Death around 1348 marks an important moment in the evolution of the “cut chicken” recipe, this basic recipe continued to appear as a plague remedy into the early
modern era. For example, in 1540 the medical faculty at the University of Vienna called for a “living dove cut in two” to be placed on the plague swelling and replaced often.\textsuperscript{19}

Amid the great pandemic of circa 1348 the “cut chicken” treatment underwent rapid change in the hands of European physicians who desperately sought ways to counter the dying. After finding little specific guidance from Avicenna’s \textit{Canon} for explaining and treating the affliction that they observed, physicians nonetheless utilized Avicenna’s statements on subjects such as pestilential fever and poisons.\textsuperscript{20} Physicians drew on Galenic physiology to explain buboes, or pestilential swellings, using ideas about superfluous or corrupted humors. Buboes appeared at emunctories, which were special sites where the body’s principal members (the heart, brain, and liver) expelled the venomous, corrupted humors that resulted from the poison’s attack.\textsuperscript{21} In order to treat such poisonous swellings, medieval physicians scoured older medical texts for existing treatments and adapted them for the new affliction. In this way, a treatment for poisonous bites and stings soon became a treatment for poison-filled buboes.

The process of adapting Avicenna’s recipe for the new affliction began immediately as the Black Death gripped Europe. The Catalan author Jacme d’Agramont gives the following advice for treating buboes in 1348 in the earliest known medical text that responded to the Black Death. This recipe is hereafter referred to as the “chicken rump” treatment: “It must be said that after the cauterization . . . it would be very profitable to apply cupping so as to draw out the poisonous matter. And some pluck the rump of a cock or a hen and hold it on the swelling to draw out the poisonous matter.”\textsuperscript{22} Although it is unclear if d’Agramont invented this “chicken rump” version, it nonetheless
became the most common formulation of the “live chicken” treatment within the emerging plague literature of Western Europe. Without an extensive survey of medieval poison literature written before the Black Death, it remains unclear if the “chicken rump” recipe had a direct precedent or if this variation on the “cut chicken” treatment was novel. Given that medical novelties began to enter plague treatises in the wake of the Black Death, however, it is possible that this was a new addition to Europe’s array of antidotal medicines.\textsuperscript{23} It is also tantalizing to speculate whether surgeons knew this treatment from practice in 1348 or earlier, given d’Agramont’s shift of language from the conditional “would” to a more active historical voice with unspecified doers: “some pluck.”\textsuperscript{24} The “chicken rump” recipe may have even originated in popular practice, as historian Andrew Wear considers in his commentary on an English version of this recipe from 1665.\textsuperscript{25}

Fourteenth-century physicians offered the “chicken rump” treatment as one of a number of treatments aimed at attracting, dissolving, and evacuating the poisons or corrupted humors inside a bubo. All sought to prevent further harm to the body’s principal members from the attacking poison and, above all, to keep it from reaching the heart. A common strategy for bubo treatments involved opening the bubo to aid the removal of the poisons, paired with a topical treatment designed to draw out the poisonous material. Such treatments included scarification followed by cupping glasses or cauterization followed by plasters or other topical agents that had the power to attract poisons. Beyond the cauterization seen in d’Agramont above, some bubo treatments involved the application of heat or warmth, such as hot baths or even medicines that possessed “potential” heat, as opposed to merely tangible heat according to Aristotle’s
natural philosophy. In such instances physicians believed that the heat of baths or “burning medicines” either softened or dissolved the corrupted humors/poisonous matter, allowing it to be expelled more easily. Although heat was therefore one aspect of the bubo treatments that developed in the wake of the Black Death, physicians often did not comment on heat or warmth when describing the “live chicken” treatments before the sixteenth century.

During the outbreak of the Black Death, the “chicken rump” recipe was circulating in Catalonia and southern France, and soon appeared in texts connected to the great medical school at Montpellier. Late medieval physicians may have first encountered the “chicken rump” treatment in the work of Joannes Jacobi, the chancellor of Montpellier’s medical school. The “chicken rump” treatment appeared in Jacobi’s vernacular French text of 1357 as well as in his Latin text of 1373, which was widely distributed in manuscripts and later in print. Jacobi’s students spread the treatment more broadly throughout Europe. One 1411 manuscript, most likely from the north German physician Heinrich Lamme, attributes the “chicken rump” treatment to his teacher Jacobi. More influential than Lamme’s work was the 1401 Latin text by another Jacobi student, the Iberian physician Valescus de Taranta. This text became more common after it appeared in print by the end of the fifteenth century. By the early fifteenth century, the “chicken rump” treatment had become established within the emerging plague literature of Western Europe.

Testing and Trying the Recipe, 1400–1720
Most interesting is what happened between 1400 and 1720 as physicians throughout Europe learned about the “live chicken” treatments, attempted to understand them, and even applied them. Myriad variations of the “chicken rump” and the “cut chicken” treatments arose in physicians’ recipes during these centuries. Such variations suggest that physicians were trying new ideas on paper, and even sometimes in practice, in the attempt to understand the recipe and its powers. Ultimately it was the plague’s poisons that physicians were trying to understand and counter through these ventures. The mysterious nature of these poisons became one of the great medical problems of the time, requiring much creativity and theoretical speculation. These recipe variants are not clear evidence that physicians or surgeons actually used the treatment, although physicians’ suggestions aimed at improving the execution of the treatment do suggest this. Although most of these recipes were likely more bookish than practical, this process of trying new variations of traditional recipes on paper represents an important way that plague medicine changed in the late medieval and early modern eras. Considering the pressure that healers felt in the face of this destructive and mysterious sickness, physicians could not afford to ignore a reputed cure for buboes.

Essential to this process of venturing new recipe ideas was the exchange of manuscripts, and later printed texts, that linked physicians and communities across Europe. An entire genre of medical literature on the plague grew after 1348, known to historians by various names: plague tracts, treatises, consilia, practica, and Pestschriften. Although a century has passed since the German historian Karl Sudhoff began his broad survey of plague tracts, many sources remain underutilized and many issues unexplored.
This is especially true of the period after 1500, which marked the end of Sudhoff’s chronological scope. Even though these plague tracts often appear formulaic and static, close investigation over a broad time horizon reveals a story of change and creativity. Among the little-explored issues is how physicians related to the traditional recipes of their profession, which sheds light on the practical side of physicians’ duties as they advised communities about the prevention and cure of plague. Here plague tracts have much to teach historians, since much content is comprised of recipes and other practical advice.

Variations in the “chicken rump” recipe appear soon after Jacobi’s era and continued for centuries thereafter. A Latin text by Peter von Kottbus from the early fifteenth century adds salt to the recipe and provides more details about how physicians understood the treatment to work: “But the attractive things, which attract the venomous substance so that it does not reach the heart, have great power, such as a cupping-glass or a bloodsucker or the anus of a living rooster, on top of which grinded salt should be sprinkled and thus placed on the abscess until it dies. Afterwards exchange with another.” Unfortunately this text does not explain how exactly the chicken or the salt attracts the poison or otherwise functions within the recipe. In the case of the suction cup or bloodsucker (leech?), the main attractive force seems to be more of a physical rather than an occult power.

Although Peter’s language about suction and attraction is vague, later physicians attempted to clarify the action. New attention to the chicken’s breathing appears in a 1450 manuscript from the Ulm city physician Hans Würcker: “Take a hen and lay its
plucked backside on [the bubo] and let the evil substance be pulled out with its breath, from which it dies.”35 This interesting twist indicates belief that the chicken could inhale from below, through its cloaca, as ornithologists call the single hole in a chicken’s backside.36 Furthermore, Würcker believed that through this physical action of breathing, a chicken could draw poisons out of the bubo and into its body. This addition to the recipe became relatively common in future versions and even inspired its own variations.

One clever addition came from the Nuremberg physician, Hermann Schedel, who in 1453 suggested holding the chicken’s beak shut in order to force the chicken to breathe from below, through its cloaca.37 In this way, physicians like Schedel and Würcker theorized about the workings of the treatment and seemed to view the main power behind the chicken recipe in strikingly physical terms. At the very least, these physical powers of suction supplemented any occult powers in the chicken that would attract poisons.38

Although it is unstated in the case of Würcker, many medieval physicians believed that poisons and their antidotes operated through occult actions, even affecting people across space, much like a magnet attracts iron or the basilisk kills people who look at it.39

Sometimes physicians do mention the mysterious qualities of the chicken rump, such as Ernst Reuchlin, who in his 1565 account stated that the chicken pulls out poisons in a “wondrous way.”40

All aspects of the “live chicken” treatments underwent modification over time—the quantity of chickens, the amount of time required, the animal in question, and ideas about how it worked. The anonymous author of a 1405 Latin manuscript from Erfurt recommended using seven chickens per hour for an entire day, amounting to an amazing
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sacrifice of birds.41 This suggestion is probably not the result of a field trial, but the result
of theoretical speculation about the strength of the poison and the antidotal power
required to counter it. As historian Melissa Chase demonstrated, medieval authors
considered poison to be an “extremely horrible substance” and even evil in its
fundamental opposition to life.42 Countering this horrible substance would presumably
require a great number of chickens.

Other additions to the recipe seem to be directed at making the procedure more
practical, such as the addition of detailed instructions intended for practitioners. The
amount of time to apply the chicken seemed to be a practical issue of concern. Adam
Zwicker of Memmingen in 1532 suggested holding a three-year-old rooster on the bubo
for the duration of three Our Fathers. The number three has holy significance as a
reference to the Trinity, but in this case it also helps the practitioner to time the
application with three short prayers. Zwicker then instructs the reader to rub salt on the
rooster’s rump and hold it on the bubo again for a full hour in order to completely draw
out all poisons. Afterward, Zwicker adds the following tip from an ego perspective: “I
advise you not to lay much over it, otherwise the poisonous material is easily driven back
into the body to the heart.”43

Such an ego perspective was uncommon in most plague treatises, but appears
more often in German plague tracts starting in the early sixteenth century due to an
emerging change within the genre. After 1500 a great wave of vernacular plague tracts
appeared in print, as town physicians throughout German-speaking lands seized the
opportunities of the printing press to promote their services and authority at a local
Indeed, Zwicker’s pamphlet of 1532 addressed the town of Memmingen and advertised his own services as well as those of the town apothecary. Most importantly, recipes became more detailed as authors such as Zwicker spoke to a broad audience from a more practical and personal perspective. This change in authorship did not alter all aspects of the plague treatise genre, of course, as the emergent ego perspectives coexisted with the more traditional practice of grounding a recipe’s credentials in learned authority. For example, the physician Johann Copp traced his version of the treatment in 1521 to the “highly-learned Nicolus Florentinus with the witness of many other doctors.” In this case “witness” may not mean firsthand experience, but appeals to trust in learned authority.

Other attempts to make the “chicken rump” recipe more practical or affordable include the recommendation to constrict the chicken’s breath through its beak at intervals in order to force suction/breathing from below. This seems to be an innovation on Schedel’s recipe, which called for constricting the chicken’s breath all at once. This change presumably would delay the asphyxiation of the chicken, thus requiring fewer chickens to complete the procedure. Perhaps the best recommendation for saving chickens and making the recipe more affordable came from Johann Naeve, physician to the Elector of Saxony. His advice of 1577 mixes elements of both the “chicken rump” and the “cut chicken” recipes in order to treat a swelling in the head (“Apostema im Haupt” or “Phrenitis”) as caused by the pestilence:

Take a living dove or a yearling rooster, pluck the same on its back, and cut it open behind on the back in order to quickly remove the heart, lung, liver and intestines. As soon as this is done, bind it warm to the [patient’s] head so that it
remains lying there for a good while. And when it grows cold, take it off and lay in warm water so that it becomes warm again. Thereafter squeeze it a little and lay it on [the swelling] again. Do this a few times.\textsuperscript{49}

Here Naeve introduces the innovation of reusing the chicken’s body by rewarming it. The affordability of the procedure seems to have been at issue, as Naeve continues by saying that those who can afford it can use three or four birds, one after the other. For the poor, however, Naeve recommends using the lung of a cow or sheep instead of the birds in order to strengthen the brain and destroy the material that caused the swelling.\textsuperscript{50} It is notable that by 1577 one could even avoid using a chicken altogether, since a warm sheep lung could work just as well as the warm body of a chicken. Overall, Naeve’s recipes show adaptation for different social classes and for a specific sort of pestilential swelling, as well as an emphasis on warmth that became common during the mid-sixteenth century, as explored further below.

As print spurred a great proliferation of plague texts in the early sixteenth century, disputes about variations of the “live chicken” treatments quickly arose. These debates hold telling clues about physicians’ own experience with these treatments, as well as their interest in building knowledge from these experiences. Some of the more popular German plague pamphlets recommend using frogs or toads instead of chickens, perhaps because they were cheaper to obtain. The author of one short and anonymous German pamphlet used rhyming verse to recommend using four “cold” frogs on the bubo in direct succession.\textsuperscript{51} Since many viewed frogs and toads to be poisonous themselves, the theory behind this variation may draw on the notion of curing like with like. Although few university-trained physicians advised the use of frogs, it had some precedent in Galen’s
use of poison to treat poison. Paracelsus entered this debate with his dried toad recipe for plague swellings. In his 1534 plague tract for the city of Sterzing, Paracelsus recommended that toads “well dried in the sun or air” be placed on the swelling. As the toad draws poison to itself through the skin, it becomes “big and full.” When the toad fills, a person should replace it with another, much like the “live chicken” treatments. An addition here confirms the “like cures like” principle—Paracelsus states that people should not shy from such remedies since God ordered that “evil pulls away evil.”

Debate ensued as contemporary physicians from Leipzig condemned the use of frogs and/or toads. After recommending the “chicken rump” treatment in his plague tract of 1529, the Leipzig medical professor Caspar Kegler added the following:

Some bind a living frog upon it, but I do not praise this. Due to the coldness, the poison may go back within, and the patient can come into great danger.

Kegler however did not oppose toads since his suggested alternatives include a dried toad recipe. Although historians sometimes credit Paracelsus for inventing the dried toad treatment, Kegler published his own five years earlier:

Now follows two poultices to pull out poisons, to which I have still not found equals. Take an impaled toad which has had all poison pulled out of it by the air and lay it in vinegar overnight or for at least six hours. . . . Lay it on the swelling and it pulls all poisons out and unto itself, so that the people are not poisoned with God’s help. It is true and tried (vorsucht worden) on many people.

In this instance it seems that the dried toad naturally pulls poisons to itself, while the vinegar may help to inactivate the toad’s own poison. And most importantly, Kegler refers vaguely to personal experience, as he discusses above “two poultices . . . to which I still have not found equals,” with the toad recipe as “true and tried.” Such use of both
theory and experience to invent and promote new cures is a common theme in Kegler’s plague pamphlets of 1521 and 1529, including his alchemical medicines. Kegler’s language of testing within his formulation of the “chicken rump” treatment also deserves consideration:

If you want to test (probirn) and know that all poison has been pulled out [of a bubo] by a poultice, take young doves or chickens and strip the area around the tail and hold them alive on it. If they remain alive, then surely all poison has been pulled out. If they die, there is still more poison present. Then reapply the poultice on it again, or apply as many living plucked doves until one remains alive.

In this context Kegler recommends the “chicken rump” treatment (or rather the “dove rump”) in order to “test and know” whether a poultice has been effective. His use of the German verb probirn echoes the Latin proba, or “trial or test,” and thus is similar to how the later Austrian physician Georg Handsch used proba as a test of the quality of a medicine. While Handsch’s work offers a detailed study in empirical thinking from the later sixteenth century, he clearly had a predecessor in Kegler.

Even more direct personal statements about using the “chicken rump” cure come from two other German physicians. In his 1539 plague text, Johann Reusch rejected all suggested alternatives to the traditional “chicken rump” treatment, including living frogs and dried toads. Writing in Leipzig just ten years after Kegler, Reusch invokes personal experience as he praised the “chicken rump” treatment: “In many places I have seen [this treatment] proven to be healing in deed, which occurs on account of the mild, natural heat, which pulls such evil poisons out from the poisoned places without particular pain.”

Most importantly, Reusch is clear that he had seen the treatment “in deed,” removing the
possibility that he had merely “seen” the treatment in a text. A further example of a firsthand witness to the treatment’s use comes in Job Kornthauer’s commentary on Paracelsus’s plague advice. Kornthauer added the following clarification to Paracelsus’s dried toad recipe: “But if toads are not to be procured, I have seen that a cock was taken and its posterior plucked, and thus bare and alive applied, and that the cock died and collected all the poison in itself. Living sparrows are said to have the same effect.” Even if these authors are lying about their personal experiences, the greater number of ego perspectives that appear in German plague literature in the sixteenth and seventeenth centuries reveals physicians’ greater willingness to appeal to personal experience as a basis of knowledge and authority.

Other firsthand accounts of the “live chicken” treatments from after 1500 confirm that physicians and surgeons had indeed applied them in practice. Both cases involve the use of “cut chicken” procedures to treat swellings inside or on the head, similar to the procedure Johann Naeve recommended in 1577, as seen above. The Basel physician Felix Platter in 1593 resorted to the “cut chicken” treatment when bleeding and cupping failed to help a delirious and raging young woman. Platter believed that the woman had not been “purified” properly after she had given birth and therefore sought ways to draw out the impurities that remained in the body. Platter’s description of the procedure in his larger work Observationes emphasizes the warmth of the chicken and the success of the treatment:

On January 12 [1593], I had a rooster cut open down the middle and placed still warm and bloody on the top of her head. Shortly thereafter, a clearly visible full, thick stream poured out and upwards from that place. When the rooster was
removed, it appeared to have been roasted and to have had an amazingly useful effect. For in the course of January 13, she began to come to herself and to speak quite reasonably and to obey.\textsuperscript{63} The use of the “live chicken” treatment by both Platter and Naeve seems to be aimed at either strengthening the brain by reinforcing its innate heat and/or drawing out poisons or corrupted humors from that region. Both however utilize the topical application of a warm chicken, the significance of which is explored further below. Platter’s case is interesting to show that this treatment found use outside of plague medicine, employed here to target other sorts of impurities.

One further example of the use of live chickens to treat pestilential head sores comes from Genoa’s lazaretto during the great epidemic of 1657. Writing about his personal experiences at the lazaretto, Father Antero Maria da San Bonaventura recounts that a Scottish surgeon treated head swellings on two children with live chickens. Here the surgeon took black hens, cut them in two, and tied them to the heads of the children, keeping them fastened for two days and two nights. San Bonaventura reports that when the hens were removed, they had absorbed all of the corrupt material.\textsuperscript{64} Such evidence shows that the “live chicken” treatments found their way into practice on some occasions, and not only for the rich. Extrapolating from this evidence, it is possible that the “live chicken” treatments were used occasionally throughout the centuries after 1348, as physicians were forced to deal with the great needs of patients amid the catastrophe of plague. The inherent costs and challenges of the recipe, however, as well as the wide array of other bubo treatments, likely limited the widespread use of the “live chicken” treatments. An upswing in evidence of practice after 1500 also does
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not mean that there was less theoretical speculation surrounding this treatment in the early modern period. Physicians continued to reimagine the treatment within new theoretical systems, including Paracelsian schemes. In 1614 Martin Forster, a physician in Dessau, created four different categories of animal treatments to correspond to the four types of plague that Paracelsus devised in the previous century. For fiery plague (peste igneo, as apparent from a bubo behind the ear), Forster recommends a live plucked sparrow used in the usual manner as the hen to pull poison into itself. For “chaosda” plague (peste chaosda, as apparent from a bubo under the arm), Forster recommends either stork flesh or live plucked hens, crows, song birds (Amseln), roosters, and partridges. For watery plague (peste aqueo), Forster recommends binding living pike, barbel fish, frogs, toads, ducks, and snails. For earthy plague (peste terraeno), Forster advises snake fat, badger fat, and the flesh of mole, fox, wolf, cat, “and all that eat foul and poisonous carrion, that which nourishes flies, spiders, toads, snakes, mosquitos, and frogs, because all of these animals have a special, powerful, magnetic power that pulls poison to them since they eat poison and can digest it as a healthy food.”65 Here Forster seems to apply Paracelsus’s idea of “like cures like” and use animals of the air (birds) to cure chaosda plague, animals of the water to cure watery plague, and carrion eaters to cure earthy plague. One can wonder, however, whether anyone acted on Forster’s advice, since binding a thrashing, toothy pike to a patient is a daunting challenge.

The Turn to Warmth
As seen above in Reusch 1539, Naeve 1577, and Platter 1593, it became more common for physicians in the sixteenth century to mention warmth as important to the medical use of live chickens. For Reusch, the chicken’s “mild, natural heat” was even the active force behind the extraction of the poison. By the later sixteenth century the attention to warmth had eclipsed the earlier explanation that relied on the chicken’s physical breath from below. There are a few possible reasons for this change and for why authors before 1500 did not mention the chicken’s warmth. What is not in dispute, however, is that this was a lasting and significant change in the history of the “live chicken” recipes.

An intellectual reason for the turn to warmth may be a renewed emphasis on Aristotle’s natural philosophy within medicine, part of the renewed attention to Hippocratic-Galenic ideas during the Renaissance. For Galenic physicians, ideas about heat or warmth drew on Aristotle’s theories of elementary qualities, which structured medical thought on the humors since ancient times. Galenic physicians believed that the body had innate heat, which helped it defend itself against poisons. Physicians could advise the use of internal or external medicines according to their “degree of hotness,” with the goal of strengthening the body’s innate heat in its struggle against poison. The Iberian physician Pere Pintor, for example, in 1499 suggested an array of localized topical treatments for the sores of the French Disease on the theoretical grounds that they provided temperate heat that supported the body’s innate heat. The new emphasis on heat within the “live chicken” recipes was therefore not unusual within learned medicine of the sixteenth century.
Warmth by the sixteenth century had become part of the larger discussions about the nature of the plague’s poison and how it spread. In the mid-sixteenth century, German physicians accepted that the plague’s poison is drawn to warmth and vice versa. This is clear in a 1553 pamphlet by the physician Jodocus Willich, as edited and reprinted the following year by the humanist physician Johann Dryander. For Willich, plague poisons were tenacious and long-lasting, able to cling to clothes and walls, and could lie inert on objects that were not washed or shaken. According to Willich, if a pillow is poisoned in this way, even when it is used years later, the movement and warmth of a person activates the poisons again. Less mysterious is why German physicians sought to describe in detail the workings of the poison. Such ideas about the nature of poison were critical for contemporary debates about the contagious nature of the sickness, and in turn debates about public health and hygiene. In the early and mid-sixteenth century, physicians and civic officials were just beginning to devise and issue civic health regulations in German-speaking lands.

Social and intellectual reasons notwithstanding, the turn to warmth may also be a further sign that practice was becoming important to the changes in the “live chicken” recipes after 1500. It is possible that an author observed in deed that chickens are warmer than humans, and was thus reminded of ancient medical thought on tangible and potential heat. With a body temperature between forty-one and forty-five degrees Celsius, compared to thirty-seven degrees for humans, a chicken would in fact deliver a mild warmth to a sick body. Moreover, warmth held physicians’ interest between the sixteenth and early eighteenth centuries, perhaps because warm compresses may have offered some
therapeutic benefit. To add more evidence to the continuing interest in warmth is the work of the celebrated physician and botanist, Jacobus Theorodus, who in 1564 mentioned the birds’ warmth and gave both “chicken rump” and “cut chicken” versions.  

Physicians sustained the attention to warmth within the recipes during the grave epidemics of circa 1680 in Central Europe. Even in the eighteenth century, the physician Gottlieb Budaeus mentions heat and warmth within his version of the “cut chicken” recipe for buboes:

If the heat subsides, you can take a dove or chicken cut into two parts, or rather the lung of sheep or calf, and lay it warm over the bubo. This treatment opens the sweat pores again where they previously had been closed by the sharp and poisonous substance. Once open, the poisonous Miasma that was pulled in can once again be pulled out.

This recipe of 1714 is similar to the recipes of Naev (1577), although Budaeus adds a theoretical explanation for how the “cut chicken” treatment works. The warm chicken (or lung of sheep or calf) opens the sweat pores, thus opening the body and allowing for the release of the poison. But as far as it contained the “cut chicken,” Budaeus’s recipe of 1714 would have been recognizable to Avicenna after seven hundred years, and probably also the physicians who promoted the “chicken rump” version after 1348.

The early modern interest in the chickens’ warmth is significant for its similarity to bubo treatments into the modern era and even up to the present. Advice from a confident New Jersey surgeon in 1930 appears similar in its basics to the early modern treatments: “The treatment [of buboes] is the essence of simplicity: the patient is put at rest and heat is applied in the form of hot wet dressings, hot baths and hot water bottles.
If absorption [of pus] is going to take place the heat will hurry it along and if the glands are going to suppurate the heat will localize the pus.”

Gone by the twentieth century are the chicken and the animal organs, having been replaced by the more hygienic hot water bottles and other compresses. Yet the similarity between the “hot wet dressings” of 1930 and the moist, warm body of a bloody chicken is too compelling to omit from this history. Even today, the “application of moist heat” appears alongside antibiotics and incision as possible treatments for buboes, whatever their etiological agent. The temperature of the modern treatments is likely much hotter than the body temperature of a chicken. Yet one can speculate that even the application of mild, moist heat in the “live chicken” treatments might yield some therapeutic benefit, if perhaps small and localized. If true, it would help to explain the longevity of the treatment over at least seven hundred years. It would also suggest that medieval and early modern physicians were justified in following this long and bookish tradition, finding inspiration in the recipes of Avicenna and other authorities, while also trusting their own abilities to figure out why the recipes work and how best to apply them.

Conclusion

In the seven centuries after Avicenna, it is clear that the “live chicken” treatments and related variants found a home in European medical thought and, to some extent, medical practice. Although uncharitable opinion may hold “premodern” plague medicine as a static tradition, the long history of the “live chicken” treatment illuminates changes in thought and practice that are not insignificant. One must acknowledge the remarkable
continuity between Avicenna and the physicians of the early eighteenth century. Yet the long history of the “live chicken” treatments also illuminates the role of the medical tinkerers of the epoch. Obscure physicians like Kegler and Reusch are worth the attention of historians of medicine and science even if they were not devising elaborate trials or experiments. As physicians who tried their ideas on paper and in practice, they were moving beyond textual authority, giving weight to their own ideas and experiences as they modified traditional treatments. All too often their subtle contributions are left out from the broader histories of plague medicine.

The importance of the recipe as a literary form also becomes clear in this history, since it was the recipe that provided the mental locus that inspired and gave substance to physicians’ search for ways to treat poisons. Since the time of Avicenna, physicians kept returning to and revising the recipe, and thus it served as “the format for storing and transmitting . . . empirical knowledge,” as historian Gianna Pomata describes the recipes of experimenta in her history of early modern epistemic genres.76 One can also detect currents of medical change arising in the “live chicken” recipes, as plague authors soon after 1500 began to appeal more often to their own experience as a basis of authority and knowledge. Thus, the networks of physicians uncovered here are important antecedents to the “res publica medica” that Pomata sees as advancing new ways of empirical thinking by the end of the sixteenth century.77

Much of this article has focused on German plague literature produced between 1400 and 1714, but further findings await a broader and more comparative approach. Closer attention to French, Italian, Spanish, English, and Ottoman plague literature
during these centuries may provide a fuller account of how the changes observed here unfolded. Some elements of German plague literature may turn out to be derivative of innovations taking place elsewhere. Or perhaps they will prove to be novel within the context of Europe’s plague literature. As with any brief history that strives to cover seven hundred years, this article can be only an initial survey of the topic.

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1. The term “‘live chicken’ treatment” serves as a general term for an entire class of cures that somehow involve the use of a whole chicken, including the “cut chicken” and the later “chicken rump” variants. Ambrosius Jung, *Ein außerrvelt loblich tractat vn regiment in dem schwären zeit der pestilentz. auß gezogen. auß den bewärttn vn weysisten alten gsch riften der artzney . . .* (Augsburg: Hans Schönsparger, 1494), B7r.


8. One early modern example of this thinking: Martin Forster, *ANTIDOTVS LOEMO. POLEMICA. Ist Eine Wahre Natur vnd Kunstgemäße Beschreibunge der Pest / vnd wie solche nach dem Willen GOttes zu curiren vnd praeserviren sey / jetzo revidiret vnd correigiret* (1614), 188–89.


10. Ibid., 476v. This falls at bk. 4, pt. 6, treatise 3, chap. 3.


15. Valescus de Taranta, *Tractatus de epidimia et peste domini Valasti de Tarenta artiu[m] [et] medicine doctoris excellentissimi* (Hagennaw: Gran, 1497), XIr; Jacob Theodorus Tabermontanus, *Gewisse vnnd erfahren Practick / Wie man sich mit Göttlicher hülff / vor der Pestilentz hüten vnd bewaren / vnnd so einer damit behafft / wie demselben zuhelfen . . .* (Heidelberg: Johann Mayer, 1564), 245v–246v.


17. Gibbs, “Medical Understandings of Poison” (n. 11), 56–85.


19. 1.5.4.0. *Wie man sich zů zeiten der Pestilentz fürsehen vnd erhallten mög* (Vienna: Hanns Syngrüener, 1540), E3r.
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23. Chase focuses on the novelties of categorization and causal explanations of the plague in the first waves of plague literature composed after 1347. Yet the creation of novel medical treatments was likely part of this process of confronting the seemingly novel sickness. There was certainly new attention to swellings and apostemes in the earliest plague treatises. There was likely considerable pressure on practitioners to treat the affliction. Chase, “Fevers, Poisons, and Apostemes” (n. 20), 153–71.

24. Winslow and Duran-Reynals, “Texts and Documents” (n. 22), 82.

25. Wear, Knowledge and Practice (n. 4), 347

27. Historians have speculated whether d’Agramont and Jacobi are the same person or are blood relatives: Winslow and Duran-Reynals, “Jacme d’Agramont” (n. 22), 762–64. See also Karl Sudhoff, Archiv für Geschichte der Medizin 17 (1925), 252.


31. On Italian plague tracts, see Cohn, Cultures of Plague (n. 4). On French printed plague tracts, see Joël Coste, Représentations et comportements en temps d’épidémie dans la littérature imprimée de peste (1490–1725) (Paris: Editions Champion, 2007). On German printed plague tracts, see Erik A. Heinrichs, Plague, Print, and the


36. The cloaca performs both reproductive and excretory functions. Due to this dual role of the single hole in chicken rump, it sometimes appears as the “sexual organ” in recipes. For an example, see Cohn, Cultures of Plague (n. 4), 79.

37. It is unclear if Schedel invented this technique. It did however become widespread among German physicians. Sudhoff seems to have believed that this was an innovation and that Schedel was the inventor. Karl Sudhoff, Archiv für Geschichte der Medizin 14 (1922): 98. Ernst Reuchlin in 1565 confirms the idea of chickens pulling in air from below (breathing) when the beak is shut: Reuchlin, Zwey kurze Bücklein (n. 14), I2r–v.


40. Reuchlin, Zwey kurtze Büchlein (n. 14), I2r–v.


42. Chase, “Fevers, Poisons, and Apostemes” (n. 20), 162

43. Adam Zwicker, Ein kurtze wolgegründte vnnderrichtung vnd erkelierung von Doctor Adam Zwicker zu0 Memmingen / wie man sich vor der erschröcklichen kranckheit der Pestilenz präseruieren / vnnd bewaren soll / . . . (1532), A4v.

44. Heinrichs, Plague, Print, and the Reformation (n. 31).

45. Zwicker, Ein kurtze wolgegründte vnnderrichtung (n. 43), A7r.

46. Gianna Pomata also stresses the importance of town and court doctors in shifting medical genres and epistemologies to a more practical slant, but in her history of the observationes, this change takes place mainly in the later sixteenth century. Pomata, “Observation Rising: Birth of an Epistemic Genre, 1500–1650,” in Daston and Lunbeck, Histories of Scientific Observation (n. 13), 45–80, see 59.

47. This may be a reference to Niccolò Falcucci (d. 1421). Johann Copp, Ein nutzlich Regiment wie man sich halten sol das man gesunden leyb behalt / viñ sunderlich vor die pestilenz / zu gut allen Christen vnnd nemlich denn eynwondern der löblichē statt


50. Ibid., l4v.


55. Kegler, Eyn Nutzlichs vnd trostlichs Regiment (n. 54), 28v.

56. Ibid., 28v.


58. Kegler, Eyn Nutzlichs vnd trostlichs Regiment (n. 54), 29r–v.


65. Forster, *ANTIDOTVS LOEMO. POLEMICA* (n. 8), 187–89.

66. Reusch, *Regiment Doctor Johan Reüschen* (n. 60), C5r. Although Johann Reusch is the earliest example of this attention to the chicken’s heat in this history, it is unclear if he is the originator of the trend.


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70. Theodorus, *Gewisse vnnd erfahren Practick* (n. 15), 245b–246b.


72. Gottlieb Budaeus, *CONSILIVM MEDICVM Wie man sich nicht allein wegen der höchstschädlichen Seuche der Pestilentz / Sondern auch der bösen Fleck-Fieber / und anderer hitzigen Krankheiten / etc . . .* (Budißin: Johann George Hüneln, 1714), 69–70.


75. I have not researched plague medicine after 1700 in any depth and therefore cannot say exactly when the chicken disappeared from bubo treatments.

76. Pomata, “Observation Rising” (n. 46), 55.

77. Ibid., 62–64.