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Playing with Medicine: A Historical Perspective

William H. Beierwaltes, PhD*

Toys are artifacts of popular culture, reflective and topical, yet delightful and frivolous. An artifactual record of the history of medicine as represented by toys with a distinctive medical theme yields fascinating insights into the perception of medicine by society. If viewed in this way, the medical toy offers a unique vignette of the history of medicine.

The toy is unusual in that it is generally created by adults but possessed by children, in whose hands it becomes a special friend and companion and the most patient of teachers. In our modern technological world, toys reflect our society, from robots and “star wars” to Barbie’s condominium and clothing. The toy with a medical theme is and always has been a rather peculiar and generally unsuccessful variant. Perhaps children's innate fear of white coats and hospitals dooms these toys to unpopularity. More likely, it is the abstract scientific nature of medicine that makes the medical toy an anomaly in the innocent, adventurous world of childhood play.

Childhood in the 18th and 19th Centuries

Childhood as we perceive it today did not always exist. It has developed only within the last two hundred years, spawned by factors such as the Industrial Revolution, an emerging affluent middle class, and advances in “modern” medicine that have led to lower infant mortality. In 18th century Europe, the rigors of everyday life, especially for the poor, precluded the innocence of childhood. Early in life, almost from birth, children were required to take on adult responsibilities and to work out of necessity. Moreover, parents were often unwilling to make emotional commitments to children who had little chance of surviving. As little as one hundred years ago in the United States, the high infant mortality shifted the average American’s life span to just over 40 years. However, those people who survived childhood could expect to live into their 60s.

Children were especially susceptible to a variety of gastrointestinal diseases, and cures were primitive, usually with little effect other than to make the sick feel that medicine was “doing something.” Most 18th and 19th century treatments consisted of removing the imbalance of “bad humors”; emetics to eliminate foul odors from the stomach and strengthen the gastric “fibers”; blistering to neutralize inflammation; diaphoretics to sweat out fevers; laxatives and enemas to flush imbalanced humors; and bleeding to eliminate circulating chemical imbalances—all to restore tone and balance to the body. Many adults could survive such medical care, but children were rarely so tough.

The Physician in the 18th and 19th Centuries

In the 18th and 19th centuries, physicians were only beginning to develop the important role they have assumed in the modern world. Many families medicated their ailments with an assortment of home-grown elixirs, and the services of the physician were often a last resort. Hospitals were usually considered to be only a place to die and were rarely available in rural settings. The standards of medical education were quite variable, licensing was rare, and there was great competition between physicians as well as with druggists for the limited resources of the patient. The development of germ theory, antisepsis, anesthesia, immunization, antibiotics, and other major changes in medical practice greatly enhanced the credibility of the physician. Before these advances, the medical profession was not yet visible enough to merit commercial exploitation in the toy market.

Florence Nightingale and the Founding of the Red Cross

While this situation was gradually changing by the mid-19th century, one factor more than any other influenced a change in the public perception and popularization of medicine. During the Crimean war in 1854, Florence Nightingale took a corps of 38 nurses to Sebastopol and to other grim theaters of war. Her successes in dramatically reducing the death rate among the wounded and ill became sensational news in the European press. As a direct result of her accomplishments, the Geneva Convention of 1864 recognized the need and importance for medical care in war (and in peace), and the International Red Cross was founded. Before Florence Nightingale, death on the battlefield was a grim but accepted fact of war. After her efforts in the Crimea, dying on the battlefield was no longer inevitable for the
Beierwaltes

maimed and wounded. As military medicine expanded and became more sophisticated, the high wartime death rates dropped. Another outgrowth of the work of Nightingale, as well as that of Clara Barton in the American Civil War, was the development of schools for nurses. Nursing became a recognized profession, and the nurse, a role model for women in medicine.

Toy makers were quick to take advantage of these new developments in medicine, and the symbol of the red cross made the medical theme suddenly popular and commercially identifiable. Dolls were outfitted in nursing attire, wagons could be marked with a red cross, and every boy’s army of toy soldiers required the support services of a medical corps.

The Growth of Military Medicine and the Medical Toy

The history of western culture is a succession of wars, and it is not surprising that warfare is the subject of many toys. For hundreds of years toys have served to train young soldiers, and the growing mass appeal of commercial toy armies in the last two centuries loosely corresponds to the trend of raising conscripted armies. In studying military toys we find a remarkably accurate description of the development of ambulatory medicine and the progressive sophistication of military medical care.

While Napoleon’s army dominated European affairs in the first decade of the 1800s, Baron Jean Dominique Larrey, the chief of his medical services (Service de Sante), was charged with keeping the fighting strength of the slowly depleting French manhood. Larrey is famous for his contributions to the treatment of trauma and published extensively on his experience. Since the source of microbial infection was not yet understood, the primary means of treating wounds to any appendage was amputation. Larrey realized that the faster a wounded soldier could be removed from the battle-field, the more likely he was to survive. After battle, it was common practice to let the wounded lie overnight among the dead until it was safe to retrieve them. In the meantime, hemorrhage, infection, exposure, and hordes of civilian looters took their toll. Larrey designed his “flying” light ambulance to remove casualties to a treatment station quickly (Fig 1). His colleague, Baron Percy, devised a converted caisson to deliver medical personnel to the battlefield to administer first aid. Owing to its sausage shape, this remarkably uncomfortable vehicle was referred to as the “wurst wagon.” Accurate models of both of these vehicles, complete with medical personnel, were among many popular Napoleonic toys sold by the firm of Maison Lucotte, which was later absorbed by C.B.G. Mignot, the most famous of all French toy soldier manufacturers.

English Military Medical Toys

As the military medical corps grew in importance in wartime, so the military medical toy gained in popularity. Perhaps the most rigorous cataloging of the progressive developments of an army medical corps was done by the famous English toy soldier maker, Britains, Ltd. Their commercial production began in 1893 and quickly eclipsed the French and German dominance in the field. Their line included the components of the Royal Army Medical Corps. First issued were stretcher teams and physicians in the dress blues of the contemporary English Victorian Army. A full-skirted nurse was soon added, as were several soldiers with noticeably superficial wounds, dressed in traditional British crimson and lying wounded at attention. The uniforms were accurately copied from the uniform plates of Richard Simkin (Fig 2). Later, a marquee medical tent was added, as was a horse-drawn ambulance.

As the First World War approached, crimson and blue gave way to the more practical khaki service dress, and appropriately clad corpsmen were added, as well as a nurse in a more modern, shorter-skirted uniform. After the First World War, Britains, Ltd introduced a...
Playing with Medicine

Playing with Medicine

motorized ambulance into the line, which was later modernized for a second version in the late 30s. Besides a civilian ambulance and corps, the highlight of this line was the unusual London air raid medical wardens with stretcher party and gas detection stick, very topical to the contemporary English market in 1940. Britains, Ltd still survives today, still producing modern toys which now include military and civilian evacuation helicopters and completely collapsible, boxed hospital wards (medical, pediatric, and radiologic). All of their toys plot an amazingly accurate depiction of English (and particularly military) ambulatory medical care over the past one hundred years.

The Military Medical Toy and Modes of Transportation

Each war in Europe or America brought major advances in medical care and triage. Unfortunately, the destructive power of the war machines seemed to keep pace. The Crimean conflict and the American Civil War were the first in which anesthetics (ether and chloroform) were used, making the common amputation decidedly less painful. During the American Civil War, Joseph Letterman instituted a more efficient ambulance system for the American Medical Corps, which increased ambulance comfort and removed its control from uninterested civilians and the quartermaster. These four-wheeled Civil War ambulances have been re-created by toy firms such as Mignot of France and S.A.E. of South Africa. They even took shape in the prolific Marx sets of plastic figures so familiar from the Sears Christmas wishbooks of the 50s and 60s.

In 1866, Lister introduced his theories of antisepsis, and while many surgeons were slow to accept the ideas, the results of their use on men injured in combat proved remarkable. Antiseptic practices dramatically improved survival in the First World War, supported by increasingly efficient triage, improved systems of hospitalization, and a proliferation of unusual ambulances and modes of evacuation. Many of these are documented by toys, from wheeled stretchers, bicycles, or mule-born stretchers to the motor ambulance.

The introduction of the motor vehicle vastly expanded the world of toys, particularly in America where there is a special love affair with the automobile. Virtually hundreds of toy cars and trucks were adapted or created especially as ambulances, civilian or military. Every toy maker, from the petite Matchbox or Tootsietoy to the massive steel Buddy-L vehicles, brought out ambulances to expand their line. Many were historically accurate, while others were just a truck or car painted white or with red crosses (Fig 3). Again, as vehicles were modernized and improved, toys generally kept pace, and over 70 years of ambulance development (allowing for some artistic license) can be found in these old toys.

Fig 2
Royal Army Medical Corps from the English Victorian Army. Early production by the English firm Britains, Ltd. Accurate but stoic toy soldiers after the illustrations of Richard Simkin.

Fig 3
A selection of early motorized ambulances by various manufacturers, c 1930s.
Medical Toys by German Manufacturers

The Germans have always been considered the premier toy makers. It was Froebel, the German educator and founder of the kindergarten system, who theorized that child's play is a form of mental discipline. The Germans pioneered in producing toys to educate children rather than to amuse adults, and much of their work is technical and realistic with great attention to detail. The German government in the 1800s was also militaristic and used toys to condition German children to the glories of dying for their country. Death is a common and graphic theme in German toys, from fairy tale characters to military toys. Hence, it is not surprising that medical toys were developed to clean up this playroom carnage.

The prolific firm of Georg Heyde produced a variety of medical pieces worthy of commercial export, adaptable to armies of any nation (Fig 4) and having a Teutonic flair for the horrific. Missing limbs or other grotesque wounds were realistically depicted. The great variety of support service equipment from the late 1800s to the First World War can be documented in these toys. For example, a complete German Medical Corps division, detailing everything from supply wagons, ambulances, unfolding wagon-loaded hospital tents, to personnel, medical staff and casualties, was exhibited in 1984 from the collection of the late Dr John Hannington in London. Many other German makers have produced medical toys in lead, tin, and paper.

Probably the most detailed medical figures are those produced in a composition material (a paste of sawdust, casein, and glue, baked in molds over a wire skeleton) by the German manufacturers Hauser-Elastolin and Lineol (Fig 5). Beginning in the first decades of the 20th century, these companies flourished in the 1930s, basing their production line on the new German military order. Topical depiction of soldiers' everyday life included medical personnel with accurate equipment (and wounds of all degrees) supported by magnificent tinplate horse-drawn and motorized ambulances, aid-stations, and hospitals.

Medical Toys in the United States

The most common medical figures in the United States are the rather clumsy dime store toys of Barclay, Manoil, and Grey Iron (Fig 6). These companies made primitive but delightful (and cheaper) copies of more detailed and expensive foreign models, while the Americans added to them a unique American attitude, a sense of Patriotism.

As a result, an American manufacturer like Whiskey River, responsible for the "G.I. Joe" figure, created a much more realistic and topical depiction of medical personnel with accurate equipment and wounds of all degrees. The company also produced tinplate horse-drawn and motorized ambulances, aid-stations, and hospitals.

Medical Toys in the United States

While I have been involved in the history of nursing and medical history for many years, I have toyed with the idea of writing a book on medical toys. I have been interested in the history of nursing and medical education, and I believe that toys can provide valuable insight into the history of medicine. I have a particular interest in the history of medical education, and I believe that toys can provide valuable insight into the history of medicine. I have seen many medical toys, and I believe that they can provide valuable insight into the history of medicine.
Playing with Medicine

These rather crude lead figures owe their manufacturing technique to the English and their poses to the Germans (compare with Fig 5), but sold for less than either (5¢).

Fig 6
American medical personnel by Manoil and Barclay, c 1935. These rather crude lead figures are those of sawdust, asphalt (skeleton) and stolin and of the 20th century military life equipment of the 1930s,前夕, military life compositions, aid equipment made, and expensively German composition figures. The variety of figures produced rivaled their German counterparts, while the adaptation to the domestic marketplace gives them a uniquely American cast. Some important medical advances are documented in these toys, such as the use of plasma and blood transfusions begun in the Second World War (Fig 7). The wounded are casual in attitude, and only the enemy die, reminiscent of General Patton’s famous line about convincing the other poor bastard to die for his country.

As a result of US involvement in the Korean War, helicopter evacuation techniques and the MASH hospital unit developed, all of which appeared in toy form. The popularity of the television program MASH has been responsible for a wealth of medical toys, from flexible figure-dolls to an entire model train with a MASH theme. Other television medical programs, Marcus Welby, Dr Kildare, and Ben Casey, all spawned games, toys, and medical kits to capitalize on the success of the shows. But as popular as the shows have been, the toys derived from them never were very successful and have retreated into obscurity.

Medical Toys and the Nursing Profession

While I have dealt primarily with male-oriented toys, the nursing profession has been responsible for a vast range of medical toys for girls. Only in the last 20 years have toymakers overcome their sex bias and made medical toys without a gender orientation. As mentioned previously, the pioneering work of Florence Nightingale established nursing as a respectable career for women. In the late 1800s and early 1900s, nursing schools flourished, and the military began incorporating nurses into their ranks. The Army Nurse Corps formed in 1901 was greatly expanded during the First World War. The image of beautiful white-clad angels of mercy ministering aid to the boys on the front was not lost on recruiters, either. Many doll makers began dressing dolls in nursing regalia, and the history of such dolls and their makers can become a volume in itself. Although the output of nursing dolls, nursing outfits, and nursing kits seems to reach its zenith during wartime, the production of nurse dolls and figurines continues. With doll collecting currently enjoying a revival,
new women in white appear (no male nurses yet), while many of the less common, older medical ladies are wonderful finds for the collector (Fig 8).

Modern Medical Toys
Medical doctor or nurse kits have been a staple of the toy industry for the last half century. These have generally undergone little change, except for the themes, gender bias, or technology represented. Basically, they consist of a bag or satchel containing equipment, some instructions, a diploma, and charting material to allow a child to begin "playing doctor." Their staying power reflects their importance as an educational toy and probably also reflects the increased importance of medicine as a profession in this century (Fig 9). Notable among these toys are those with a military theme, filled with wartime propaganda for junior; some of the more elaborate contemporary versions include realistic working instruments and representations of high technology not normally found in the simple traditional kit.

Besides these popular medical toys, many other medical toys have been produced that further illustrate medical history. Hospitals are unusual as toys, but Mignonnet produced a detailed, boxed interior of a French field hospital from the Franco-Prussian War. Model train layouts have variously included hospitals, most notably those of Plasticville made for Lionel or Marx O-gauge, whose skylight opened to reveal wards filled with beds and an operating room (Fig 10). Marklin made a standard gauge train car containing beds and a surgical suite, while more recent and detailed HO scale trains depict a variety of medical stock. In the 1970s, Fisher-Price produced a full hospital for young children filled with comical but durable figures and accoutrements. Many other toys have been made using a medical theme, from a plush toy Snoopy in surgical greens to the original GI Joe outfitted with a rather complete field medical kit. When beginning to look for the medical toy, one is surprised at where and how often it appears.

Fig 8
Two examples of nurse dolls. On the left, a fine German bisque nurse by Armand, c 1908. On the right, a crude American cloth (war-production) nurse, c 1943. While distinctively different, each served a similar purpose as a subtle teacher.

Fig 9
Cover-art to a play doctor's kit, "The Little Army Doctor," by Transogram, c 1944. Doctor and nurse kits have proliferated since the 1930s and often contain interesting and unusual equipment (this kit contains a working hand-held x-ray machine) or propaganda.
Playing with Medicine

Fig 10
Complete hospital for O-gauge train sets by Plasticville, c. 1950s. This model contains beds, toilets, operating room and nursery, visible through the skylight in the roof. Models of hospitals are unusual, but when produced, they are often elaborate.

Toys are wonderful, frivolous objects of childhood, but they are probably not given credit for the influence they exert over their child-owners. Toys can entertain, but they may also have an effect that frequently is not comprehended by the adult. They provide a world where personalities and adventures can be tried without the risks of failure. As historical artifacts, toys tell us much about the people who produced them, their social values, and the relationship between child and parent. The role of medicine in this perspective is unusual and should not be underestimated. Although medical toys are rarely successful on the commercial market, they document medicine as a contemporary art. Apart from the inherent value of these objects, they are important as windows on medical history.

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