**EDITOR’S NOTE**

**Of White Coats and Stethoscopes**

Mark D. Hiatt

A white coat. The country doctor’s black bag. A stethoscope. A snake-entwined staff. The oath of Hippocrates. The clinical acumen of Osler and the compassionate service of Schweitzer. These are the symbols and personifications of our chosen profession.

One symbol of medicine since antiquity has been the Aesculapian staff.1 A glance through this journal will uncover the staff in the American Medical Association’s emblem, depicting a snake coiled around the rough, knotty staff of the Greek physician Aesculapius. In this issue of MSJAMA, Nathan W. Williams explores the connection between snakes and the art of healing across cultures; Judith Anne Stanton introduces us to Aesculapius. Williams reveals that the serpent can represent the forces of both healing and destruction. Stanton demonstrates that society’s alternating praise and distrust of the medical profession have been present throughout time and suggests that such ambivalence will continue.

Valerie A. Jones turns her attention to another Greek healer, Hippocrates, who bestowed on modern medicine a legacy of ethical thought embodied in his famous oath. This pledge has become part of a new ceremony that Jones describes in her discussion of a second inherited symbol of the profession—the physician’s white coat.

Timothy Lahey, MD, argues that we must preserve the purity of the meaning behind such symbols as the white coat by always acting in the best interest of our patients.

By exploring the symbols that form and influence the culture of medicine, we hope to come closer to the heart of what it means to be a physician.

**REFERENCE**


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**1999 Frank Netter Arts Contest for Medical Students**

MSJAMA and Novartis Pharmaceuticals are pleased to announce an art competition for current medical students. Art in any media may be submitted. We welcome your best paintings, etchings, pencilworks, collages, sculptures, and photographs. Send artwork as slides; photographs as large glossy prints; computer graphics on diskette in gif or jpg formats along with a printout. Entries must be clearly labeled with the artist’s identification (name, e-mail and mailing addresses, telephone and fax numbers, medical school), title of the piece, media used, and the date of completion. Entries will be returned if requested. Entries must not have been previously published in print or electronic format and must not have been submitted elsewhere during the review period. Winners will be selected based on composition and artistic quality and will be considered for publication on the MSJAMA cover. Novartis will award prizes of cash, Netter atlases, and interactive media for selected artworks.

Entries must be postmarked by May 24 and sent to:

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FOR MUCH OF RECORDED HISTORY, SERPENTS AND SERPENT- 
staffs have been associated with the healing arts.1-4 One modern 
emblem of medicine, for example, is the single-serpented 
staff of Aesculapius, the Greek god of healing. Although such 
serpentine symbolism is quite prevalent, many consider the 
connection between serpents and medicine obscure. One inter-
pretation is that just as the serpent represents the forces of 
life and death as a messenger between the earth’s surface and 
the netherworld, the physician stands as an intermediary in 
the struggle between healing and destruction.1,2,5

Worshipped and feared in countless cultures, the serpent 
is a central figure in various accounts of the creation. The an-
cient Mesopotamians portrayed their goddess Ishtar, the source of all life, as a snake. In Ori-
ental, Hebrew, and Greek cultures, the ser-
pent was sometimes known as “the mother of 
all.” Some Hebrew scholars even believe the 
name Eve to be derived from the word for ser-
pent. Similarly, the ancient Chinese depicted 
our first parents with human upper bodies and 
entwined serpentine lower bodies.1 To these 
another cultures, the serpent was a source of 
endless meditation on the mystery of life and creation.

Not only did the serpent have the power to create life: it 
also had the power to preserve life. The snake’s unique abili-
ty to shed its old skin represents a triumph of self-renewal 
over aging. This metaphor is conveyed in a legend shared by 
several cultures, which states that God intended to tell hu-
mans to cast off their old skins as they aged and to become 
young again, but the message was instead delivered to the ser-
pent.1,6 According to the Sumerian account, a serpent shed 
its skin after swallowing the “herb of new life” it had stolen 
from Gilgamesh.2 Similarly, blood from the right side of a ser-
pentine monster, the Gorgon, gave Aesculapius the power of 
resurrection, while blood from her left side was poison.

With its seeming power over death, the serpent became a 
symbol of deliverance. Moses raised a bronze serpent on a staff 
upon which the afflicted might look and be healed (Numbers 
21:6-9). The blind Roman emperor Theodosius regained his 
sight when a serpent placed a stone on his eyes. Aesculapius 
assumed the form of a serpent to deliver a city from plague, 
and those who suffered were healed when licked by snakes 
in his temples.1 Further, Kannon, the Japanese goddess of mercy 
who was believed to deliver people from their difficulties, is 
often depicted with a snake.1

When twined around a staff, the serpent stands as a clearer 
symbol of the healing art. Staffs represent sacred trees. In Near 
Eastern cultures, these trees were viewed as a type of the cosmic 
axis connecting this world with the underworld and the heavens. The image of Trees of Life, central to ancient cre-
ation accounts, permeates modern culture. Spires and steeples 
are cultural remnants of this archetype. Mystical powers as 
well as practical applications were attributed to such staffs.1,3 
Aesculapius’ knotty staff, for example, assisted the god in his 
walkings to serve humankind. It also served as a walking 
staff for a priest or a crutch for the ailing.1 In 
its support for those in search of healing, the 
Aesculapian staff differs from other deriva-
tives of sacred trees, including the mace, wand, 
and scepter, that command subservience.4

Strangely, in contrast to its beneficent as-
ociations, the snake has also represented de-
struction and death. Several ancient accounts 
portray the serpent as the enemy of life.1,3 The 
serpent’s dual nature represented the struggle 
between life and death as well as the potential for resurrec-
tion and immortality.1,2 As a creature that could travel 
between the surface and the subterranean worlds with an un-
canny undulating motion, the serpent assumed the role as 
messenger between this world and the underworld.1,2

As symbols of life and death, serpents and their associated 
staffs represent both the aspirations and dangers of medical 
practice. When pursued with wisdom and beneficence, medi-
cine is often able to heal the ailing. However, the dark forces 
of chaos and sickness may still triumph. Our modern serpen-
tine symbols, vestiges of ancient thought and culture, inform 
us that this struggle continues.

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Aesculapius: A Modern Tale

Judith Anne Stanton, University of Florida College of Medicine

It is in and through symbols that man, consciously or unconsciously, lives, works, and has his being.
—Thomas Carlyle, Sartor Resartus, 1836

Modern medicine lately has been the focus of much criticism. Both patients and physicians are quick to highlight the problems and pitfalls of the current medical system and foresee hard times in the profession’s future. Although people in the United States have access to more technologically advanced health care than ever before, they are more distrustful of doctors and the powers of what may be broadly called the “medical system.” Medical science seems to be fulfilling the prophecies of science fiction, in which doctors are portrayed as either heroes or villains.

To decipher the controversies surrounding medicine today, it is helpful to reexamine the discipline’s origins in ancient Greece. After all, it is from ancient Greece that we derive our earliest and most enduring icons and ideals of medicine. Knowing the origins of the traditions of caring can deepen our personal understanding of the basis for our aspirations as physicians, the expectations of our patients, and the difficulties we encounter in our efforts to achieve these goals.

The Ancient Greeks

Study of ancient medical lore reveals that the controversies and contradictions facing modern medicine span the history of the profession. The language and mythology of the ancient Greeks reveal their recognition of the dual roles medicine plays as mediator of both mortality and cures. Apollo was both the god of physic and sender of disease. Phurmakos is the Greek word for both remedy and poison.

The image of the physician in the Western world originates with the Greek god of health and father of medicine, Asklepios, whom we also know by his more familiar Roman name, Aesculapius. According to earliest known writings, dated around 1500 BC, Aesculapius was the son of Apollo and his mortal mistress Coronis. Apollo killed Coronis in a fit of jealous rage after she was unfaithful to him. As her body was placed on the funeral pyre, he discovered that she was pregnant. He was stricken with remorse. He delivered their unborn child, Aesculapius, from her womb and gave him to Chiron, the centaur, to raise and to train in the art of healing.1 Aesculapius was stricken with remorse. He delivered their unborn child, Aesculapius in his dreams.1,3 The famous Arabian physician, Avicenna, published his medical texts in 1544 with an image of Aesculapius on the frontispiece. The Aesculapian staff remains the artistic symbol of medicine today.

The Intensivist

Aesculapius was known by all accounts as a kind and gentle healer, relieving men of their pain and suffering. Eventually, his skill as a physician became so great that he was not only able to keep all his patients from dying, but he was also able to raise the dead. Zeus, king of the gods, was so angered by the audacity of a mere mortal performing such miracles that he killed Aesculapius with a thunderbolt. The contradiction here is self-evident. Zeus resented Aesculapius for the very reason that he was venerated on earth. He healed mortals and elevated the human race. He had discovered how to make men potential rivals to the gods and ultimately threatened their power.1,3

Is this so different from today, when physicians are accused of “playing god” by defying the natural boundaries of life and death? Critics often blame the explosive advances in scientific knowledge for transforming the traditional art of healing and palliation into an unnatural extension of life. Volumes have been written about the industrialization of medicine and the consequences of what has been considered technology-driven medicine. Yet, as one can see in the tales of Aesculapius, the “intensivist” character of the physician, who expands the art of healing ultimately to defy death, has existed for centuries, long before modern miracles such as cloning, gene therapy, organ transplantation, and artificial reproductive technologies.

The very birth of Aesculapius from the womb of his dying mother, in what many consider the earliest documented cesarean delivery, symbolizes the ability of the physician to seize life from death. The snake wrapped around the Aesculapian...
staff may also have had more than merely symbolic value. Snakes tied to a stick may have been a way of inoculating patients with nonlethal doses of snake venom—a primitive hypodermic injection device. Aesculapius is often depicted as a surgeon, holding a surgical knife or even performing surgery. These early images demonstrate the existence of surgical and other invasive life-saving procedures long before the development of modern science and technology. The implication is that the enmity engendered by modern physicians represents an inherent duality of human nature, rather than a natural reaction to technology gone awry.

The Divine
To blame modern society for elevating physicians to god-like status, as critics do when they assert that traditional religion has been replaced by the worship of science, is simply inaccurate. Aesculapius was venerated for his healing abilities. Over the centuries his status evolved from mortal to divine. He was vested with the unique ability to rise from the dead. Eventually, he became the most worshipped god in Greece. He was one of the first foreign gods accepted in Rome, and numerous Aesculapian temples persisted for centuries throughout the Roman Empire. The status of Aesculapius in pagan religion was considered parallel to that of Jesus Christ in Christianity, as the central deity around which the religion persisted. Thus, we can see that the near-religious reverence that some hold for physicians is not just a phenomenon of modern society but parallels attitudes that date back as far as 3000 years.

As humans, we want to defy mortality. In the face of death, we seek miraculous cures and unlimited hope. At the same time, we fear and resent the mortal who can achieve these goals. Such abilities may challenge our innate belief in the sanctity of the human soul, imagined to be beyond the control of man. The mythical status of Aesculapius, as demigod, represents the inherent contradictory expectations that we have of physicians. Throughout time, men have shared the common fantasy of the physician capable of healing all illness and defeating death. Thus, we created Aesculapius, a figure who was born out of death, who learned through perfecting his healing craft to bring others back from the dead, and who was finally resurrected from death himself. Yet, in being killed, Aesculapius fails as a god. Ultimately, he cannot save himself from death. His status as a half-mortal, who possesses emotion and dwells on earth, rather than on Olympus, represents his failure. At the same time, he fails as a mortal, by using his craft to save those already condemned to death. This tale demonstrates that from the earliest known times, the physician has been caught in the contradictory expectation to be both human and divine. Consequently, he can never fully be either.

The Tale Retold
Contemporary discussions often question the focus of medicine, arguing that traditional medicine has emphasized the maintenance of life at the expense of quality and comfort. The historical trajectory of medicine is often divided into 3 eras: the prescientific, in which medicine could not significantly save or extend life, but only provide some comfort and palliation; “technology-driven medicine,” in which science has been used myopically to cure disease; and, more recently, public outcry for a “return to humanism.” In this current phase, we are trying to synthesize the pluralistic demands of modern Western society into one coherent system of care. This pluralistic approach is evidenced by the recent attention to alternative medicine, spirituality, ethics, prevention, mental health, and holistic health. However, an examination of the history of medicine shows us that none of this is new.

Critics of modern medicine should not blame the technological revolution or loss of humanism for our current state of dissatisfaction with physicians. Rather, they should blame our timelessness inability to reconcile conflicting desires and beliefs within ourselves about our own mortality. Our current veneration and concomitant distrust of the medical profession are sentiments that have been present throughout time, and probably will continue. The modern physician perpetuates the tradition of Aesculapius and, in doing so, bears the same social burden of both veneration and hostility. Rather than trying futilely to eliminate these contradictions, it seems our efforts as physicians would be better spent continuing to emulate the example of Aesculapius, carefully negotiating the contradictions of the powers and limits that we will face in the process.

REFERENCES
The White Coat: Why not Follow Suit?

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ONE HALLOWEEN I OPENED THE FRONT DOOR TO WELCOME A group of candy-craving children that included a 4½-foot-tall vampire, 4-foot-tall angel, and 3½-foot-tall doctor. The latter child had a circular mirror bound to her forehead with black electrical tape, a pair of horn-rimmed glasses balanced tentatively on her button nose, a stethoscope dangling about her knees, and a white coat that fit like a box tent. I wondered, “Is this what she thinks a doctor looks like?” That night I had come face-to-face with a caricature of my own image as a future physician.

The white coat is a universal symbol of the medical profession. A study of how the media depict physicians revealed that the most common accessory adorning physicians is the white coat, followed closely by the stethoscope.1 How did the white coat become accepted as the physician’s identifiable uniform?

Adopting the Lab Coat
In the middle of the 19th century, science had damaged the respectability of medicine by demonstrating that its cures were worthless, thus relegating much of medicine to the realm of quackery and healing cults. While scientists were admired, physicians were distrusted.

The medical profession turned to science. After all, it was thought, the laboratories whose inventions could transmit messages instantaneously and had revolutionized transportation, could certainly provide breakthrough advances in curing disease.1 Physicians, seeking to represent themselves as scientists, thus adopted the scientific lab coat as their standard of dress.

The Evolution of the Lab Coat
Originally, lab coats were beige, but when adopted by the medical profession in the late 19th century, white was chosen. Early evidence of this change comes from photographs of surgeons wearing short-sleeved white coats over their street clothes at Massachusetts General Hospital in 1889.1

The change to white was appropriate for the times. Earlier in the history of medicine, clerical caretakers in hospitals donned black robes. The severe tone of these robes conveyed a sense of mourning and approaching death, sadly appropriate for the inevitable fate of those brought to the hospital in critical condition. With advances in medical care in the 20th century, however, hospitals were no longer regarded as houses for dying, but institutions of healing. The white uniforms of physicians symbolized this new hope in medicine.1

The Meaning of Whiteness
White was chosen with good reason as the new standard of the medical profession. This color, representing purity, is a visual reminder of the physician’s commitment to do no harm. White represents goodness. Moses, Jesus, and the Saints, for example, are often described as being clad in white.1 White also conveys cleanliness and connotes a purging of infection.1 Further, the white coat symbolizes seriousness of purpose. It communicates the physician’s medical intent and serves as a symbolic barrier that maintains the professional distance between physician and patient. Perhaps most importantly, the white coat is a cloak of compassion.2

Why Wear White Coats?
There are both advantages and disadvantages to wearing the white coat. Objections have been raised about the excessive formality that the coat may communicate. For this reason, most Scandinavian physicians, along with many US pediatricians and psychiatrists, have abandoned it use.3 However, the white coat is an important accessory to the image of the physician that should not be carelessly tossed away. Wearing a white coat need not make a physician seem cold or insensitive. His or her attitude matters most. A physician in a white coat may still be warm, friendly, and empathetic.

The white coat reminds physicians of their professional duties, as prescribed by Hippocrates, to lead their lives and practice their art in uprightness and honor. In accord with this sentiment, the Arnold P. Gold Foundation of Columbia University College of Physicians and Surgeons initiated in 1993 a “White Coat Ceremony” that has been adopted by many US medical schools. In 1997, 83 of the 142 accredited medical and osteopathic schools in the United States conducted this rite of passage.4 The ceremony is typically performed for the incoming class at the beginning of each academic year. Students are welcomed into the family of medicine by reciting the Hippocratic oath and receiving admonishments to practice medicine with honor and compassion, after which they join with faculty and staff as they don their new uniform.

The white coat, as one of medicine’s most important symbols, signifies that, in the words of Dr Gold, “a physician’s responsibility is not only to take care of patients, but also to care for patients.”4

REFERENCES
Rejuvenating the Symbols of Medicine

Timothy Lahey, MD, LDS Hospital, Salt Lake City, Utah

I took the greatest interest in his doctor’s bag, a miniature black suitcase, fitted inside to hold his stethoscope and various glass bottles and ampules, syringes and needles, and a small metal case for instruments.

—Lewis Thomas, The Youngest Science: Notes of a Medicine Watcher

We bestow symbols on the things we value. We top the spires of our churches with crosses, wear wedding rings on the left third finger, and fly our country’s flag on national holidays. Symbols not only help us identify easily with the object of our attention, but also give us something concrete on which to pin our feelings. Symbols give us an ideal, a goal, a vision of ourselves.

The same is true in medicine. From the beeping ECG monitor to the once-ubiquitous black doctor’s bag, television and books are full of such imagery. These symbols dramatize the respect physicians receive from our society, as well as the mystery people ascribe to the healing art.

Such symbols also celebrate the high standards that, to its practitioners, are medicine’s thrilling challenge and awesome responsibility. Working in health care provides daily reminders that many physicians deserve high praise. However, there is another reason why physicians and patients alike portray doctors in a flattering light: when the oxygen mask is descending and the thiopental is flowing in, it is comforting to think that the green-gowned surgeon is more knowledgeable and more skilled hands than your average bystander. And it helps to feel a bit that way if you are the one with knife in hand. But there is more at play here than idolizing physicians: these lofty ideals instruct us. They link us to the great tradition of physicians before us and provide a beacon to lead us through the trials of medical training and practice.

In recent decades, high social status and even higher salaries have brought doctors an enhanced public visibility that has inevitably made the disparity between our expectations and the actuality of doctors’ human nature more obvious than anyone likes. Putting aside physicians’ more mundane shortcomings, it is still all too easy to recall examples of some physicians’ quackery, indiscretion, and greed. Clearly these few have ignored medicine’s ideals altogether. Add to this mix the frighteningly rapid changes in the financing and delivery of health care, and you have all the ingredients for a large-scale backlash against physicians.

This backlash has brought with it a new set of less flattering symbols. Images of slick black BMWs and the patient’s 15-minute visit with a brusque stranger have gained their place among medical icons. They reflect the unfortunate reality that high social status has brought with it ostentation and that some of us have allowed profit to interfere with caring for patients.

Despite the kernel of truth in such caricatures, dedicated and brilliant people populate our hospital halls who should not be spuriously stripped of the respect they deserve. Thus the healing profession is under siege, from within and without. We have among us doctors who care too little for their patients, and we exist in a skeptical society that is too ready to cast aspersions on an honorable profession.

So how do we reclaim the symbols of medicine, both to give our good doctors their due and as a way of showing future physicians what medicine should be? The fight must be conducted at the bedside and in the political arena.

Importantly, we should recognize that the worth of medicine lies not in its public image but in the good done for patients. Physicians heal people, and the more we become businessmen and public relations representatives, the more we compromise this vital function. Certain danger awaits once a physician enters the public relations fray. Any blatant campaign to rejuvenate the positive values of medicine could appear contrived, especially when people already worry that medicine and its practitioners have become superficial. If physicians minister attentively to their patients, as they have for millennia, then we will continue to deserve the trust of our patients. This is nothing new, just something important to remember in an age when we may be tempted by salary or misdirected ambition to abandon this time-honored practice.

Epidemiology teaches us that poverty and violence and a host of other social ills are as pathogenic as the metabolic derangements and infectious micro-organisms we treat every day. Thus, in order to provide the kind of complete medical care that will regain our patients’ trust, we should value caring bedside medicine with activism aimed at redressing such social afflictions.

Society’s symbols reflect its values. By staying true to a clear vision of comprehensive patient care, doctors will ensure that their great profession remains a valued and respected part of society, one that lives up to its proud history and lofty symbols. These symbols dramatize the respect physicians receive from our society, as well as the mystery people ascribe to the healing art.