

Further reducing the emphasis on value-based care would represent a missed opportunity for the federal government to implement public-sector policies that could hold down costs for patients and taxpayers and influence private-sector purchasing practices. It could lead to a permanent change in the zeitgeist and a resurgence in health care spending growth.

Disclosure forms provided by the authors are available at NEJM.org.

¹Bloomberg School of Public Health and Carey Business School, Johns Hopkins University, Baltimore; ²Harvard T.H. Chan School of Public Health, Boston; ³the Dartmouth Institute for Health Policy and Clinical Practice, Geisel School of Medicine, Hanover, NH.

This article was published on April 12, 2025, at NEJM.org.

1. Swagel PL. Re: CBO's projections of federal health care spending. Congressional Budget Office, March 17, 2023 (<https://www.cbo.gov/system/files/2023-03/58997-Whitehouse.pdf>).
2. Blumenthal D, Stremikis K, Cutler D. Health care spending — a giant slain or sleeping? *N Engl J Med* 2013;369:2551-7.

3. Buntin MB, Freed SS, Lai P, Lou K, Keohane LM. Trends in and factors contributing to the slowdown in Medicare spending growth, 2007-2018. *JAMA Health Forum* 2022;3(12):e224475.

4. Smith SD, Newhouse JP, Cuckler GA. Health care spending growth has slowed: will the bend in the curve continue? National Bureau of Economic Research, December 2022 (<https://www.nber.org/papers/w30782>).

5. Cutler DM, Ghosh K, Messer KL, Raghunathan TE, Stewart ST, Rosen AB. Explaining the slowdown in medical spending growth among the elderly, 1999-2012. *Health Aff (Millwood)* 2019;38:222-9.

DOI: 10.1056/NEJMp2413472

Copyright © 2025 Massachusetts Medical Society.

PHYSICIANS IN THE AMERICAN REVOLUTION

Doctors in Revolution and War, April–June 1775

Justin Barr, M.D., Ph.D.,¹ Scott H. Podolsky, M.D.,^{2,3} and David S. Jones, M.D., Ph.D.^{3,4}

The beginning of the American War of Independence, 250 years ago this week, was memorialized by Henry Wadsworth Longfellow in words that would be recited by generations of American schoolchildren: “Listen, my children, and you shall hear of the midnight ride of Paul Revere.” Longfellow immortalized Revere’s summoning of militias on April 18 and 19, 1775, to defend Concord from a British raid. But Longfellow’s version obscured the work of a doctor, Joseph Warren. It was Warren’s intelligence network that uncovered the British plans. It was Warren who sent Revere and William Dawes on their mission. It was Warren who fought on the front lines as the British retreated from Concord, treating the wounded along the way. And it was Warren who gave his life in June 1775 at the Battle of Bunker Hill.

Warren’s position in society epitomized the complicated sta-

tus of physicians of his time. During the Revolution, more than in any subsequent American war, doctors played critical roles beyond their medical functions. They served as political, military, and social leaders — and sometimes spies — who guided a colony, then a country, at war.

Born in 1741 in the Province of Massachusetts Bay, Warren was the oldest of four boys in the family of a prosperous farmer.^{1,2} He attended Roxbury Latin School and enrolled in Harvard College in 1755. After a stint as a schoolteacher, he studied medicine and apprenticed himself to the distinguished physician James Lloyd. At the age of 22, Warren hung up his shingle in Boston and built a successful practice. The courage he displayed while inoculating patients during a 1764 smallpox epidemic established his reputation. He took on his own apprentices, including his youngest brother, John Warren, and Samuel

Adams, Jr. Like many successful physicians, he purchased an enslaved boy.

Warren’s political activity grew with his medical practice. Starting in 1765, the British government imposed taxes and tariffs on its American colonies. A long-time friend of Samuel Adams, Warren authored dozens of editorials excoriating British policies. As the British established additional garrisons in Boston, confrontations between civilians and soldiers increased. In March 1770, in what would come to be called the Boston Massacre, British soldiers fired into an unruly crowd; Warren cared for the wounded. Two years later, he delivered an oration commemorating the massacre, a highly visible protest. His friend and fellow physician Benjamin Church delivered the commemorative address the following year. Many historians believe Warren played a central role in coordinating the

Boston Tea Party in December 1773.^{1,2}

The British government responded forcefully. It named General Thomas Gage the royal governor of Massachusetts (he arrived in May 1774), gave him more power over the government and courts, stationed additional troops in the city, and closed the port of Boston to trade (the “Intolerable Acts”). Gage sent troops to seize military supplies from arsenals in Somerville, Portsmouth, and Salem.³ Working alongside Samuel Adams, John Adams, and Church, Warren served in or led many of the groups that organized the growing resistance to British rule, including the Sons of Liberty, the committees of correspondence (Warren led the Boston committee), and the Massachusetts Provincial Congress. Despite his politics, Warren continued to treat patients who were loyalists.

As tensions mounted, both sides gathered intelligence.^{1,3} Warren collected information from his patients and other informants in Boston. Fearing another British raid, he advised local militias in February 1775 to move their artillery to Concord, a safer location farther from Boston. Gage, however, had cultivated his own informants, including the well-placed Church, who, along with another spy, warned Gage that the colonists had stockpiled their cannons in Concord. Tensions continued to escalate. In March, Warren again delivered an address commemorating the Boston Massacre. In April, Gage received orders from London to take stronger action against the colonists and arrest their principal leaders. Gage thought it wiser to seize their weapons. He targeted Concord.



The Battle of Bunker's Hill, June 17, 1775, John Trumbull (1786).

From the Trumbull Collection, Yale University Art Gallery.

When Warren learned about Gage's plan to march on Concord, he decided to summon the colonial volunteer militia, the Minutemen, to thwart that mission, sending Revere and Dawes on their midnight ride. An initial skirmish in Lexington led to a larger battle in Concord that forced the British to retreat under fire to Boston. Warren rushed to the scene, one of at least 10 medical men who fought the British that day. He engaged the retreating British soldiers at Menotomy (now Arlington), losing a lock of his hair to a nearly fatal musket shot. Dr. Eliphalet Downer joined the fighting there and bayoneted a British soldier to death. Warren and the other doctors also cared for the wounded, both colonist and British. They evidently saw no contradiction between their roles as fighters and their obligations as healers.

The “shot heard round the world” that day transformed simmering tensions into open war. Warren, Church, and John Hancock, as leaders of the Commit-

tee of Safety, took charge of raising an army of 15,000 New Englanders that besieged the British in Boston.^{1,2} As head of the Provincial Congress, Warren commissioned Benedict Arnold to capture Fort Ticonderoga and secure its cannons. Warren and Church (not yet outed as a spy) led efforts to organize medical care for the growing army. Each regiment was supposed to have two physicians, but in an era before licensing, doctors' training and quality varied widely. Warren established an examining board that attempted to ensure physicians' competence. He also commandeered homes to serve as hospitals for sick and wounded soldiers.

As the siege continued, both sides recognized the strategic importance of the heights across the harbor from Boston. Against Warren's advice, colonial forces decided to occupy Bunker Hill and Breed's Hill in Charlestown on the night of June 16. This move surprised the British. They launched a counterattack the next day. Warren arrived just before

the attack, dressed in his finest outfit. Immediately recognizable, he buoyed morale among the troops. By all accounts, he fought gallantly and steadied the colonists' lines. The American defenses held off the first two waves of the attack. As their ammunition ran low, however, they were routed by the third British charge. Warren helped to cover the retreat of the colonial militias — before being shot and killed, one of the roughly 140 Americans who died on the battlefield.

Warren arrived just before the attack, dressed in his finest outfit. Immediately recognizable, he buoyed morale among the troops. By all accounts, he fought gallantly and steadied the colonists' lines.

Nearly 280 American soldiers were wounded but survived, and they required treatment.⁴ Warren's brother and one-time apprentice, John, was one of the local physicians who rushed to help. While looking for his brother, he was attacked by a British sentry who stabbed him in the chest; he showed his scar with pride for decades. Unfortunately, the colonists' army lacked a proper medical service. A menagerie of practitioners descended on the region, caring for the wounded in homes seized from loyalists. John Warren worked as a surgeon in a general military hospital in Cambridge. The dead, including Joseph Warren, were covered in quicklime

and buried in a shallow grave in Charlestown.

In the aftermath of the battle, Congress created the Continental Army Hospital Department. Church led this effort until October, when he was exposed as Gage's spy and imprisoned.³ It took several years for the medical service to attain some semblance of organizational competency. John Warren served in the Department throughout the war, working as a surgeon under George Washington in Long Island and New Jersey before returning to Boston in 1777.

After the war ended, he helped found the Massachusetts Medical Society in 1781 and Harvard Medical School in 1782.

Although Joseph Warren died in the second month of the war, his early leadership and martyrdom made him famous. The first hero of the revolution, he was as renowned as George Washington in the early days of the republic. John Trumbull immortalized him in a majestic painting (see image). Trumbull had served in the 1st Connecticut Troops at the Battle of Bunker Hill, but he didn't witness Warren's death — his depiction is more commemoration than documentation.⁵ Emulating *The Death of General Wolfe* (1770),

painted by his mentor Benjamin West, Trumbull placed Warren in a Christ-like pose, illuminated by an unseen sun. In contrast to the uniformed red coats of the British infantry, the varied garb of the American soldiers reflects their status as a "people's army." Emphasizing the democratic nature of the struggle, Trumbull included the two Black soldiers who fought with the colonists that day.

Warren's heroic death, memorialized in paintings, plays, and monuments, quickly came to overshadow his life. His work as a political leader in the decade before the Battles at Lexington, Concord, and Bunker Hill has largely been forgotten. The *Journal's* commemoration of the centennial of Bunker Hill included both a paean to Warren by physician-poet Oliver Wendell Holmes and a celebration of "the connection of the medical profession with the most important social and civil events of modern times." By the 20th century, Warren's fame had been eclipsed by that of Washington, Thomas Jefferson, and eventually Alexander Hamilton. Yet it was Warren, more than these later revolutionary leaders, whose stratagems catalyzed the transition from protest to revolution. All that remained was for the colonists to win the war.

This is the first in a series of articles exploring the roles of physicians, medicine, and disease in the American Revolution at its 250th anniversary.

Disclosure forms provided by the authors are available at NEJM.org.

¹Ochsner Transplant Institute, Ochsner Clinic, New Orleans; ²Center for the History of Medicine, Countway Library of Medicine, Harvard Medical School, Boston; ³Department of Global Health and Social Medicine, Harvard Medical School, Boston; ⁴Department of the History of Science, Harvard University, Cambridge, MA.

This article was published on April 12, 2025, at NEJM.org.

1. Di Spigna C. Founding martyr: the life and death of Dr. Joseph Warren, the American Revolution's lost hero. New York: Crown Press, 2018.
2. Forman SA. Dr. Joseph Warren: the Boston Tea Party, Bunker Hill, and the birth of American liberty. Gretna, LA: Pelican Publishing, 2012.
3. Bell JL. The road to Concord: how four stolen cannon ignited the Revolutionary War. Yardley, PA: Westholme Publishing, 2016.
4. Cash P. Medical men at the siege of Boston. Philadelphia: American Philosophical Society, 1973.
5. Jaffe IB. John Trumbull, patriot-artist of the American Revolution. Boston: New York Graphic Society, 1975.

DOI: 10.1056/NEJMp2500480

Copyright © 2025 Massachusetts Medical Society.