



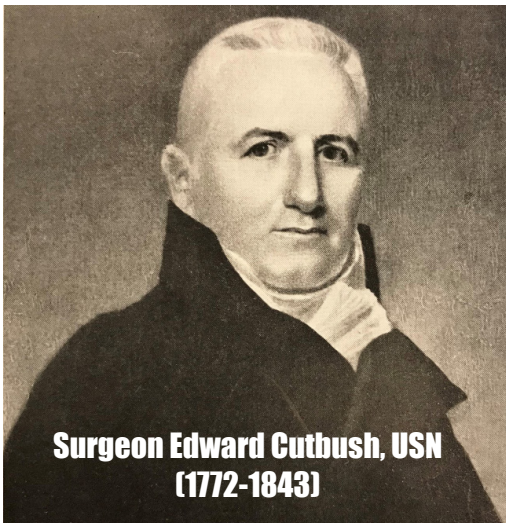
NAVY MEDICINE IN THE AGE OF SAIL HEALTH & MEDICINE AT SEA

- While combat injuries were a concern in the Age of Sail, **disease was the biggest killer of Sailors and Marines**. More succumbed to disease and illness than to combat.
- Yellow fever, malaria, smallpox, dysentery and influenza all took heavy tolls on ship crews. **Scurvy was also a significant problem** until the regular use of citrus fruits was implemented.
- During the first years of the U.S. Navy, naval surgeons worked to improve the health and readiness of Sailors and Marines.



THE FIGHT AGAINST SCURVY ON U.S. NAVY SHIPS

- Few diseases have been more synonymous with Sailors than scurvy, once known as the “Black Death of the sea.”
- Years after the British Royal Navy successfully demonstrated the treatment and prevention of this affliction through citrus fruit and / or lemon juice rations, the disease continued to plague the U.S. Navy.
- In 1809, Surgeon William Paul Crillon Barton took on the fight against scurvy while aboard USS United States. He lobbied the Secretary of the Navy to furnish naval ships with what he described as a clarified lemon-lime ration.
- Individual fleet commanders, ship captains and their surgeons were thereafter permitted to adopt antiscorbutic rations aboard ships.



Surgeon Edward Cutbush, USN
(1772-1843)

THE FIRST VACCINES

- In 1796, British surgeon Edward Jenner developed the first vaccine, using cowpox to immunize against smallpox. **The term vaccine comes from the Latin word for cow (vacca).**
- Surgeon Edward Cutbush of USS United States reported that he “**vaccinated**” **12 Sailors against smallpox** while the ship was off of Charleston, South Carolina in 1799. If this was indeed vaccination, and not variolation, this would be the first incidence of vaccination in the Navy.
- Variolation was commonly **used in the Navy prior to vaccination**. The practice called for immunizing an individual against smallpox by exposing them to the live virus. **Vaccination involves inoculation by using a weakened or inactivated virus.**
- The U.S. Navy made **smallpox vaccinations mandatory for all recruits in 1848**. Navy physicians were required to document vaccinations and report the totals quarterly to the Bureau of Medicine and Surgery (BUMED).



Did you know?

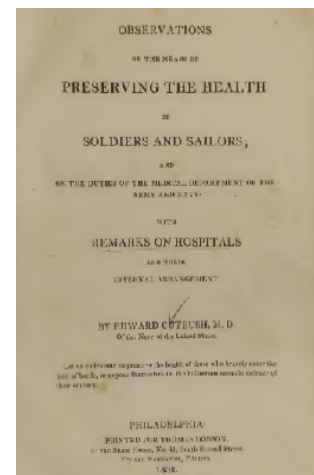
Surgeon Edward Cutbush's 1808 textbook, *Observations on the Means of Preserving the Health of Soldiers and Sailors*, was a landmark in U.S. military medicine. The publication contained the first proposal for a "Medical Department of the [U.S.] Navy."

CURBING DISEASE THREATS

- Long before the advent of germ theory and mosquito control, naval surgeons in the Age of Sail grappled with mosquito-borne illnesses using the prevailing medical wisdom of the time. Shipboard physicians relied heavily on mercury-based purgatives and emetics, venesection (bloodletting), and blistering / cupping—all drastic measures aimed at expelling the supposed root cause of disease.
- Calomel (mercury chloride) and jalap (a poisonous root) were commonly used to stimulate the intestinal tract and rid intestinal irritation. Potassium acetate was used to increase secretion and flow of urine. Opium and laudanum were used to relieve pain and induce sleep.
- Dehydration would prove a significant problem for patients being treated for the disease. Navy physicians counteracted dehydration with tamarind water, weak chamomile tea and lemonade.
- Cinchona bark (Peruvian bark), containing the alkaloid quinine, offered a crucial, if not fully understood, weapon against malaria. Widely used aboard sailing ships, it served as both a prophylactic against malaria and a treatment for other febrile illnesses, arguably representing the most effective tool in the physician's arsenal against this devastating disease.

“Let us endeavor to preserve the health of those who bravely enter the field of battle, or expose themselves, on the boisterous ocean in defense of their country”

~Surgeon Edward Cutbush, USN, 1808



SOURCES:

Artwork:

- All images courtesy of BUMED Archives, Navy Art Gallery, and the National Library of Medicine.

Publications:

- Cutbush, E. (1808). *Observations on the Means of Preserving the Health of Soldiers and Sailors*. Philadelphia: Thomas Dobson.
- Langley, H.L. (1995). *A History of Medicine in the Early U.S. Navy*. Baltimore: Johns Hopkins.
- Pleadwell, F.L. (1923). "Edward Cutbush, M.D.: The Nestor of the Medical Corps of the Navy." *Annals of Medical History*. New York: Paul. B. Hoeber, Inc., V(5).
- Sobocinski, A.B. (Dec. 28, 2020). "The Navy's Fight Against Scurvy." *DVIDS*.