



"Light the candles and let's get on with this!"

Celebrating A Strong Pulse On Its 200th Birthday: The Stethoscope

Happy Birthday!

If you missed the stethoscope's 200th birthday party last October, don't worry; it was too busy saving lives to attend its own bicentennial bash. The stethoscope is an iconic instrument of healthcare. It was invented in 1816 by Rene' Laennec at the Necker-Enfants Malades Hospital in Paris. Women's healthcare was the motivation behind it. Laennec was uncomfortable with placing his ear on women's chests to hear heart and breathing sounds. His answer to this issue was a wooden listening tube and the stethoscope was born. Largely taken for granted, his innovation just reached the 200-year mark, all the while undergoing numerous changes and improvements. With us for two centuries, it is frequently the first medical instrument to touch us following birth and the last one to touch us following death.

A stethoscope is on-the-go, standard issue equipment in healthcare. Doctors, nurses, physician assistants, respiratory therapists, paramedics and other healthcare professionals have them perched around their necks, slung over shoulders, holstered in pockets or coiled in bags and medical chests. Stethoscopes go to war and are used by medics at the front lines to treat the wounded. In university healthcare and other large medical complex settings, you will frequently see them adorn the interior rearview mirrors of cars.

A Diverse Career Path...

The stethoscope has utility beyond the healthcare industry. Coroners use them "just in case". Auto mechanics apply them to diagnose bad bearings, failing water pumps, faulty valves, leaky gaskets, worn gears and other issues. It has been an instrument of humor in shows like M*A*S*H, The Three Stooges, Bugs Bunny, Sponge Bob and other comedic venues. Engineers use them to detect leaks in various types of sealed processing equipment or sophisticated vacuum systems. They are a tool of intrigue in gangster and film noir movies when used in the hands of the ever calm, capable, doctor-like hands and ears of a safecracker.

A Swiss Army Knife Of Healthcare Instruments...

The stethoscope is a multi-purpose device. In human and veterinary healthcare, it transmits sounds from the patient's heart, blood vessels, lungs and bowels. It measures blood pressure and even the width of the liver. In the ER setting, it has been a tool of communication put to use in a pinch with patients hard of hearing as a hearing aid. While ultrasound and other device technology are increasingly used in healthcare, the immediacy/portability of the stethoscope delivers quick insights at point-of-care around the world. No matter where the patient or clinician is or the language spoken, the stethoscope is an effective translator.

The stethoscope is non-invasive, enabling clinicians to "see inside the body by hearing" and is far less complex than an X-ray or imaging unit. For added versatility, some stethoscopes have twin sides, a flat side known as the "diaphragm" and a cone-shaped side called the "bell". The diaphragm is best for higher pitched sounds of breathing and normal heart functions. The bell is usually used for lower pitch sound in detecting heart murmurs or sounds from the bowel. Clinicians are trained in the specific ways to hold/apply a stethoscope depending on the side being used and what is being assessed with the instrument. Stethoscope owners choose their instruments primarily based on the patient types they will be working with and comfort/ease of use. They "get to know" their equipment and are familiar with the nuances of using them to get the best performance.

Basic stethoscope designs are configured according to their heads and tubing:

- Single-head and single tube
- Dual-head and dual tube (Rappaport-Sprague)
- Dual-head and single tube
- Multi-function head

Not Just A Bundle Of Metal And Plastic...

Stethoscopes deserve love and attention -and they get it. To make sure they aren't mixed up, misappropriated (stethoscopes have a tendency to "walk away") or seen as sinister serpents/disguised shot-givers (think "Pediatrics"), they are accessorized and personalized. Name tags, sticker wraps, tiny stuffed toys, small chain jewelry, holiday-themed trinkets and other adornments are often attached to them. Some are engraved with the clinician's names or initials. They are available with various tubing lengths, colors, ear tips, timepieces and metal finishes plus other differentiated components. A clean stethoscope is a happy stethoscope and so are the clinicians and patients it touches. Stethoscopes need to be cleaned frequently to avoid transmission of pathogens to patients as well as caregivers.

A Change Agent...

As with all things healthcare, the stethoscope has undergone continual improvement. Propelling Laennec's invention into the future, Golding Bird, Arthur Leared, Philip Cammann, David Littman and Richard Deslauriers all made pivotal contributions to improving the stethoscope. Stethoscopes have evolved based on accuracy, materials, technology, specific patient care applications and other variables. There are stethoscopes designed for noisy environments such as those experienced by EMTs in metropolitan settings, fire rescue teams and industrial accident situations as well as medics in combat environments. Students at John Hopkins University have even developed a special stethoscope for use with astronauts on spacecraft.

Stethoscopes are manufactured by a variety of producers including American Diagnostic Corporation, Cardionics, Heine Optotechnik, Littmann, Omron and Welch Allyn. Like so many premium goods, there are even unauthorized "counterfeits" of some stethoscope models. While the Littmann Classic III is a very popular instrument widely used in a variety of care settings, there is not a universal stethoscope for all medical purposes. No matter the brand, the stethoscope is a universal symbol of healthcare widely used by marketers, health insurers, medical practices, hospitals and other entities.

A quick overview of various types of stethoscopes includes:

- Acoustic (the “stereotypical”) stethoscope
- Doppler (think “ultrasound”)
- Electronic
- Fetal
- Recording
- Veterinarian

An Economic, Seasoned Veteran And High Tech Hipster...

Even by the tightest personal budget and managed care cost control standards, the stethoscope continues to be a bargain for the great diagnostic insights it delivers. A very basic but functional stethoscope can be bought for around \$20 (often for use by patients at home) with prices going upwards into several hundred dollars for electronic models with digital displays and other features.

Recording and electronic stethoscopes can be calibrated to zero in on specific sounds and rhythms. Some have data storage and transmission capabilities including Bluetooth and other means to transmit readings remotely; combining the attributes of Internet of Things (IoT) and telehealth. This technology enables clinicians to truly tune into what is going on within the patient plus make greater use of data by storing it for comparative purposes in evaluating a patient’s ongoing condition and sharing it with other clinicians. The recordings can also be used to educate clinicians in training. At 200 years of age the stethoscope is a seasoned veteran and high tech hipster able to meet the needs of baby boomers, generation-Xers, millennials and other generations of clinicians and patients.

Express Your Appreciation...

It would be interesting to know how many existing or aspiring clinicians were first exposed to hands-on use of a stethoscope courtesy of American Girl, Barbie, Fisher-Price or Playskool doctor, nurse or veterinary toy sets. Its attributes/mechanisms are unique. By transmitting sounds/vibrations as sources of life-critical information from the patient, the stethoscope serves as the eyes and ears of clinicians. In your next encounter with a stethoscope, be certain to extend your best birthday wishes and a “Thank You” for its service. This humble but essential instrument of healthcare has been with you from the start.

Dedicated to and with "Thanksgiving for" the doctors and nurses in my family: Betty Bilski, Todd Ewert, Lindsey Garnett, Cheryl Glova, Cindy Glova, Kathy Hennelly, Helen Kiraly, David Kohan, Kathleen Kohan, Tomulyss Moody, Colleen Rodriguez, Cheryl Sheehan and Kathy Sheehan -- plus two future ones: Reese Baresky and Brian Ducay.

Thank you for reading this article. As a Healthcare Marketer, my experience covers an array of products including oral / injectable / biological pharmaceuticals and medical devices; as well as programs / services in numerous medical specialties and market sectors. This background includes brand management, managed care and digital marketing.

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