The history of medical records is thousand-year-long, with earlier roots in ancient civilizations. Until the 19th century, medical records mainly served educational purposes, later assuming other roles such as in insurance or legal procedures. This article comprehensively describes and reviews the development of medical records from ancient to modern times in Europe and North America, reflecting alterations and adaptations compliant with the mental and technological capabilities of a given period. We searched PubMed and Google Scholar databases to collect pertinent articles. English articles or those having English abstracts were considered. The search terms included "Medical Records," "Health Records," "History of Medicine," and "eHealth" and covered the last hundred years. References were also picked out from the identified articles. Overall, 600 articles were identified, 158 of which were judged thematically relevant. The general conclusion is that medical records undergo a revolutionary change from paper-based to electronic format, which reflects the development of eHealth systems. The migration process to eHealth records involves the use of artificial intelligence (AI) algorithms that streamline medical services by using faster and simpler working methods. Al benefits both patients and providers as it improves patient management and communication among medical centers, spares resources, identifies contamination or infections, and limits health costs. These advantages have become pointedly apparent during the recent COVID-19 scourge