

# Perspectives from the History of Medicine Division of the United States National Library of Medicine, National Institutes of Health

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2011 marks the 175th anniversary of the United States National Library of Medicine (NLM) that traces its origins to 1836 and the commitment of the second US Army Surgeon General, Thomas Lawson (1789–1861), to purchase books and journals for active-duty medical officers.<sup>1</sup> The occasion affords an opportunity to focus on the contributions of the NLM to the history of medicine and public health, and to look forward into the digital world of the twenty-first century as the NLM joins with like-minded institutions, scholars, educators, writers, students, and others to expand knowledge of medical and public health history for the advancement of scholarship across the disciplines and for the education of the general public.<sup>2</sup> As more audiences become interested in medical and public health history, opportunities abound to broaden and deepen understanding of the past, present, and future of medicine and public health in order to help refine critical thinking about medicine and science, promote deeper understanding of medical and scientific concepts, and generally humanise medicine and public health by revealing the implications of disease and healthcare for individuals and communities in the United States and around the world.

## Background of the US National Library of Medicine

An agency of the United States government, the NLM is a component of the US National Institutes of Health (NIH), one of the world's foremost public research centres whose

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<sup>1</sup>Wyndham D. Miles, *A History of the National Library of Medicine: The Nation's Treasury of Medical Knowledge* (Bethesda, MD: National Library of Medicine, 1982).

<sup>2</sup>This essay is based on the author's presentation at 'The Future of Medical History' conference and articulates with others included in this special issue of *Medical History* and with Robert Peckham, 'The History of Medicine: Challenges and Futures', *Perspectives on History: The Newsmagazine of the American Historical Association*, 48, 8 (2010), 45–7.

current director is the eminent physician–geneticist Francis S. Collins. The NIH consists of twenty-seven institutes and centres which together employ nearly 20,000 individuals and involve an annual budget of \$31.2 billion. Its 320-acre campus in Bethesda, Maryland – eight miles from Washington, DC – is part of the US Department of Health and Human Resources (HHS), a unit of the executive branch of the US government which has Cabinet-level representation through the current HHS Secretary Kathleen Sebelius.

The NLM itself is the world's largest biomedical library with a collection of over twelve million books, journals, manuscripts, audiovisuals, and other forms of medical information. Under the directorship of Donald A.B. Lindberg, MD since 1984, the NLM has global influence through developing electronic information services that deliver trillions of bytes of data to millions of users every day. Scientists, scholars, educators, health professionals, and the general public in the United States and around the world search the NLM's online information resources more than one billion times each year.

Since 1995, Elizabeth Fee, PhD has led the NLM's History of Medicine Division (NLM/HMD) in its stewardship of the most treasured collections of the institution. Including material from the eleventh century to the present, and standing among the richest of any institution in the world, these collections encompass:

- All monographic material in the NLM printed before 1914; thousands of later pamphlets and dissertations; and all pre-1871 journals; approximately 70,000 of these items were printed before 1801, and about 580 before 1501;
- One hundred early Western manuscripts (before 1600) and microfilm copies of approximately 600 manuscripts held by European libraries;
- Over one hundred and twenty Islamic manuscripts in Arabic and Persian relating to science and medicine dating from the eleventh century to the nineteenth century;
- Over 17,000 linear feet of modern manuscript collections, including an extensive oral history collection;
- Over 100,000 prints and photographs illustrating social and historical aspects of medicine, including portraits, images of institutions, caricatures, genre scenes, posters, and graphic art;
- Over 16,000 historical audiovisual titles – produced between 1910 and the present – including films, videocassettes, slide-tape programmes, film strips, and audiocassettes;
- Over 5,000 printed books, manuscripts, and visual material in Japanese, Chinese, Korean, Tibetan, and Mongolian dating from the seventeenth century to the twentieth century.

### **Past and Present Contributions**

Through its stewardship and provision of open and free access to these and many other unique collections, the NLM will influence the future of the history of medicine field as researchers from a range of disciplines contribute to scholarly debates and public understanding of medical and public health history. Central to this

effort are several online databases developed and maintained by the NLM/HMD, including:

- **IndexCat** <<http://indexcat.nlm.nih.gov>>, the digitised version of the printed *Index-Catalogue of the Library of the Surgeon General's Office*, which contains in searchable formats over 4.5 million online references to over 3.7 million bibliographic items, encompassing material dating from Antiquity through to the middle of the twentieth century;
- **Directory of History of Medicine Collections** <<http://www.nlm.nih.gov/hmd/directory/index.html>>, a continuously updated database which reveals to users the depth and variety of history of medicine collections in libraries, archives, and museums around the world; and
- **Images from the History of Medicine (IHM)** <<http://www.nlm.nih.gov/hmd/ihm>>, which provides access to nearly 70,000 images in the collections of the NLM/HMD.

PubMed Central (PMC) <<http://www.pubmedcentral.gov>> is another resource of tremendous value to researchers, writers, educators, and students. Developed and managed by the National Center for Biotechnology Information (NCBI) in the NLM, PMC offers users free full-text and full-search access to approximately two million full-text articles in biomedical and life sciences journal literature. While a significant number of the journals are relatively recent publications dating from the 1990s, back-digitisation projects have resulted in the complete digitisation and free access via PMC of a number of important and historically significant medical and public health journals. One of the most significant of these projects took place in 2004 when the NLM signed a co-operative agreement with the Wellcome Trust and the Joint Information Systems Committee (JISC) to jointly fund the digitisation of a number of historically significant biomedical journals. These include *Annals of Surgery* (first published in 1885), *Biochemical Journal* (1906), *British Medical Journal* (1853), *Bulletin of the WHO* (1947), *Eugenics Review* (1909–68), *Journal of Anatomy* (1866), *Journal of Physiology* (1878), *Journal of the Royal Society of Medicine* (1809), and *Medical History* (1957).<sup>3</sup> The inclusion of these and many more complete historically significant journal runs in PMC constitutes an invaluable research tool that will serve generations of scholars, educators, and students.

Complementing PMC is the NLM's digital repository, Digital Collections <<http://collections.nlm.nih.gov>> that currently features monographs and films held by the NLM/HMD and allows users to perform full-text and keyword searching within each collection or across the entire repository. The first release of Digital Collections includes a newly expanded set of Cholera Online monographs, a portion of which the NLM first published online in PDF format in 2007. The version of Cholera Online now available via Digital Collections includes 518 books dating from 1817 to 1900 that address cholera

<sup>3</sup> Martha Fishel and Carol Myers, 'The PubMed Central Archive and the Back Issue Scanning Project', *Journal of Interlibrary Loan, Document Delivery, and Electronic Reserve*, 17, 3 (2007),

109–16. See also Robert Kiley, Martha Fishel and Carol Myers, 'Biomedical Journal: The First 100 Years Online', *The Biochemist*, 28, 1 (2006), 46–8.

pandemics of that period. Digital Collections also includes a selection of eleven historical films, all created by the US government and in the public domain. The films have been digitised in a variety of video formats, to accommodate a wide range of playback devices, including mobile devices. Digital Collections also includes an integrated, Flash-based video player which allows full-text search of a film's transcript and graphically displays where the searched word or phrase occurs within the timeline of the film. Additional NLM/HMD holdings will be added to Digital Collections, making this resource even more valuable for scholarship across the disciplines and for the education of students and the general public.

The NLM/HMD also actively promotes, conducts, and facilitates scholarly inquiry and public education through a variety of initiatives, including lectures, symposia, film series, and – most importantly – its award-winning exhibition programme and its many web sites.

The NLM/HMD's exhibition programme <<http://www.nlm.nih.gov/hmd/about/-exhibition>> develops exhibitions based upon original scholarly research and – through its travelling exhibition services – provides these and other professional exhibitions to libraries across the United States. Since the birth of the programme in the late 1990s, hundreds of thousands of individuals in communities across forty-four states and at more than 247 institutions have seen the NLM's travelling exhibitions, and hundreds of thousands more have experienced these exhibitions through companion websites enriched with educational resources designed for different interests, learning levels, and academic goals. Additionally, the NLM's exhibition programme has an active presence on Facebook – as does the NLM overall – thus enabling connections between new generations of students and the history of medicine and public health.

The NLM/HMD is also home to a team of technology professionals who are dedicated uniquely to creating websites that feature NLM/HMD collections and exhibitions. New sites appear regularly alongside a variety of projects which have included 癆病 – Consumptive Disease: Chinese Anti-Tuberculosis Posters, 1950–1980', 'An Iconography of Contagion: A Web Exhibition of Twentieth-Century Health Posters', 'Most Horrible & Shocking Murders: Murder Pamphlets in the Collection of the National Library of Medicine', and 'An Odyssey of Knowledge: NLM's Medieval Manuscripts and Early Printed Books'.<sup>4</sup>

Additionally, the NLM/HMD develops websites in collaboration with colleagues across the institution, particularly in the Lister Hill National Center for Biomedical Communications (LHNCBC), a research and development division of the NLM. *Turning the Pages* <<http://archive.nlm.nih.gov/proj/ttp/intro.htm>> refines original technology used by the British Library to enable users at kiosks, online – and now on an iPad – to touch, turn, and explore in visual and intellectual depth the pages of virtual books, such as the Edwin Smith Papyrus, Hanaoka Seishu's *Surgical Casebook*, and Hieronymus Brunschwig's *Liber de Arte Distillandi*, among other notable and rare works. Profiles

<sup>4</sup> A listing by date of all NLM/HMD online exhibitions and digital projects may be found at <<http://www.nlm.nih.gov/projects/bydate.html>>.

in Science® <<http://profiles.nlm.nih.gov>> – a research product of the digital library research programme of the LHCNCBC, conducted in collaboration with the digital manuscripts programme of the NLM/HMD – makes available the rich archival collections of leaders in biomedical research, clinical medicine, and public health, including C. Everett Koop, Virginia Apgar, Rosalind Franklin, Francis Crick, Barbara McClintock, and Linus Pauling, among many others.

### **The Future is Now**

As technology has informed the recent past and immediate present of the history of medicine, so too will it shape the future of the field – as well as scholarship, teaching, and learning overall – through advances such as mobile computing, open content, electronic books, and augmented reality.<sup>5</sup> The NLM stands at the forefront of this future in many ways, especially as the institution embarks with other leading medical libraries in developing the Medical Heritage Library <<http://www.medical-heritage.org>>. This collaborative project aims to digitise and make freely available through the Internet Archive tens of thousands of medical materials from earliest times to the present.<sup>6</sup> Comparable opportunities abound for history of medicine and public health manuscripts and audiovisuals, and the NLM looks forward to participating in such ventures with institutional partners. The NLM/HMD also looks forward to expanding its travelling exhibition programme and associated online resources in co-operation with interested libraries in the United States and around the world.

The range of initiatives described here makes the NLM one of the most influential public institutions in shaping the future of the history of medicine. As a public institution with one-hundred and-seventy-five years of experience in collecting materials and providing information and research services in all areas of biomedicine and health care, the NLM is committed to introducing more audiences to its unique holdings. The NLM is also committed to developing new and innovative collaborations that advance research, teaching, and public understanding of medical and public health history. To these ends – and in unwavering support of the future of the history of medicine – the NLM invites you to be in touch, to explore its resources online at <<http://www.nlm.nih.gov>>, and to visit its home on the NIH campus when you are in the Washington, DC area.<sup>7</sup>

<sup>5</sup>L. Johnson, R. Smith, H. Willis, A. Levine and K. Haywood, *The 2011 Horizon Report* (Austin, TX: New Media Consortium, 2011), available at <<http://net.educause.edu/ir/library/pdf/HR2011.pdf>>, accessed 28 March 2011.

<sup>6</sup>The Medical Heritage Library is funded by a \$1.5 million award from the Alfred P. Sloan Foundation to the Open Knowledge Commons, a non-profit organisation dedicated to building a universal digital library for democratic access to information. Project partners include the Francis A. Countway

Library of Medicine at Harvard Medical School, the Harvey Cushing/John Hay Whitney Medical Library at Yale University, the Augustus C. Long Health Sciences Library at Columbia University and the New York Public Library.

<sup>7</sup>Complete visitor and research information is available at <<http://www.nlm.nih.gov/about/visitor.html>>, and the NLM/HMD staff directory may be found at <<http://www.nlm.nih.gov/hmd/about/hmdstaff.html>>.

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