

Open (Flu) Season: A Case Study of The American Influenza Epidemic of 1918: A Digital Encyclopedia

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The *American Influenza Epidemic of 1918: A Digital Encyclopedia (AIE)* (2012) is an undertaking by the University of Michigan's Center for the History of Medicine (CHM) in partnership with the University of Michigan Library's MPublishing division, to create an open source digital collection of archival, primary, and interpretive materials related to the history of the 1918 influenza pandemic in the United States. This virtual collection, powered by the University of Michigan's Digital Library eXtension Service (DLXS), documents the experiences of diverse communities in the United States in the fall of 1918 and winter of 1919 when influenza took the lives of approximately 675,000 Americans. The National Endowment for the Humanities (NEH) awarded the project a prestigious "We the People"



designation for its contribution to the teaching, study, and understanding of American history and culture.

The *AIE* was officially released to the public on October 10th, 2012, at a celebratory event held in the University of Michigan's Harlan Hatcher Graduate Library Gallery. To date, the website attracts an average of 100 unique users a day. An active Twitter feed (@1918FluArchive) complements the website.

Project Background

The materials in the *AIE* collection originated as research for two government-commissioned reports. In 2005, the Defense Threat Reduction Agency contacted CHM and asked the staff to conduct a study of "escape communities," or places that experienced few influenza cases and no deaths during the 1918 pandemic. A formal report (Markel, Stern, Navarro, & Michalsen, 2006) focused on a historical evaluation of the non-pharmaceutical interventions employed by seven communities¹ was delivered to DTRA in early 2006. Following the DTRA study, in 2007, the CDC tasked CHM with conducting a quantitative historical study of American cities during the pandemic. Expanding their original project a great deal, CHM researchers studied 50 diverse cities across the United States. At the project's end, they concluded that cities that acted early, implemented a layered response, and kept health measures in place for longer fared better, experiencing lower influenza and pneumonia mortality rates. Their final report, published in *JAMA*, is the basis for the United States government's pandemic preparedness policy (Markel et al., 2007).

Recognizing the importance of the materials collected during the DTRA and CDC projects, CHM staff members originally intended to pursue publication of a print-based encyclopedia based on their research. However, when it became clear that the comprehensive volume they envisioned would be cost-prohibitive, the CHM staff decided to adapt the project for a digital format. With the guidance of colleagues in the University of Michigan's Scholarly Publishing Office (later renamed MPublishing), the CHM staff began to prepare a digital encyclopedia drawing on their research and subject expertise. Funding for the project was provided by CHM, the CDC, and an NEH Preservation and Access grant.

Project Features

The *AIE* collocates an estimated 50,000 pages of digitized reproductions of archival materials gathered by CHM staff at over 140 national institutions. It is intended for a wide-ranging audience that encompasses high school and college students, historians and social scientists, epidemiologists and public health practitioners, journalists and writers, as well as casual Internet users interested in the period.

¹ The communities studied include: the San Francisco Naval Training Station (Yerba Buena Island, California); Gunnison, Colorado; Princeton University (Princeton, New Jersey); the Western Pennsylvania Institution for the Blind (Pittsburgh, Pennsylvania); Trudeau Tuberculosis Sanatorium (Saranac Lake, New York); Bryn Mawr College (Bryn Mawr, Pennsylvania); and Fletcher, Vermont.

The *AIE* is the first digital encyclopedia to document the social, cultural, public health, and human dimensions of the most devastating infectious health crisis to occur during the post-germ theory era and it is the first to highlight the responses of over 50 American communities. In addition to archival materials, the website offers interpretative documents that serve as templates for self-guided research projects. The most notable set of interpretative documents are the 50 “city biographies” written by CHM’s research team. These essays explore the responses taken by 50 of the most populous cities during the fall of 1918 and winter of 1919 as influenza ravaged their communities. The essays present the social and cultural context of each city and explore the issues that became significant as the epidemic unfolded over the fall and winter. Each essay is approximately 2,000 words and provides not only a portrait of the city during the epidemic—steps taken to prevent infection and the spread of disease, death totals, and introduction to major officials—but also the current state of the city at the time. Interactive timelines complement the essays.

Produced by the University of Michigan Center for the History of Medicine and M Publishing, University of Michigan Library

INFLUENZA ENCYCLOPEDIA

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THE AMERICAN INFLUENZA EPIDEMIC OF 1918-1919: A DIGITAL ENCYCLOPEDIA

Welcome

"They are placed on the cots until every bed is full and yet others crowd in. The faces soon wear a bluish cast; a distressing cough brings up the blood stained sputum. In the morning the dead bodies are stacked about the morgue like cord wood."

—Victor Vaughan, *A Doctor's Memories*

An estimated 650,000 Americans lost their lives to the infamous and tragic 1918-1919 influenza epidemic, a small but significant fraction of the approximately 50 million deaths the disease caused worldwide. Countless more were left without parents, children, friends, and loved ones. Communities across the country did what they could to stem the rising tide of illness and death, closing their schools, churches, theaters, shops and saloons. Doctors, nurses, and volunteers gave their time – and, occasionally, their lives – to care for the ill.

These pages contain the stories of the places, the people, and the organizations that battled the American influenza epidemic of 1918-1919.

Search the Archive

SEARCH OUR COLLECTION OF OVER 18,000 HISTORICAL DOCUMENTS AND PHOTOGRAPHS

BROWSE THE ENCYCLOPEDIA BY POPULAR CATEGORIES

PEOPLE

PLACES

ORGANIZATIONS

SUBJECTS

50 U.S. Cities & Their Stories

Albany	Minneapolis
Atlanta	Nashville
Baltimore	New Haven
Birmingham	New Orleans
Boston	New York
Buffalo	Newark
Cambridge	Oakland
Charleston	Omaha
Chicago	Philadelphia
Cincinnati	Pittsburgh
Cleveland	Portland, OR
Columbus	Providence
Dallas	Richmond
Dayton	Rochester
Denver	Salt Lake City
Des Moines	San Antonio
Detroit	San Francisco
Fall River	Seattle
Grand Rapids	Spokane
Indianapolis	St. Louis
Kansas City, MO	St. Paul
Los Angeles	Syracuse
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Writing History in the Digital Age Open Peer Review

In Fall 2011, one year before the *AIE*'s public launch, a preliminary case study appeared in the open peer review edition of *Writing History in the Digital Age*, a born-digital, open access

book edited by Jack Dougherty and Kristen Nawrotzki. The six-week open peer review process, which generated 945 comments across all contributed articles, was a valuable opportunity to interact with scholars involved with similar projects and a chance to gauge future public reactions to CHM's then forthcoming digital encyclopedia.

During *Writing History's* open peer review process, hosted on the project's WordPress website under a Creative Commons Attribution-Non-Commercial 3.0 license, members of the general public were invited to comment on the publication in general, on individual essays, and on specific paragraphs within each essay. All comments required an author to submit his or her full name and e-mail address (kept private), to minimize flaming and facilitate communication with the editors. The *AIE* case study received 10 constructive reader comments. Digital Curator Julie Judkins made an additional four comments in response to questions. Responses to the *AIE* case study centered around three broad themes: inquires about technical specifications, appreciation of the *AIE's* open source format, and reactions to the *AIE* as a pioneering piece of historical scholarship.

Although support for open access projects might be expected within the confines of an open access experiment like *Writing History*, the CHM development team was nevertheless gratified to read readers' enthusiasm for projects like the *AIE*. In response to the *AIE* case study, Abbey Lowe wrote, "It was interesting to see this type of archival research that is intended, not to be insular only for academic or scholarly uses, but also hopes to reach the public sphere in terms of health related issues. This led me to think about how collaboration [...] brings relevancy to work that, although actively pursued by a few, can now be accessed and used by communities." As champions of open access content and believers in the power of shared research, the *AIE* team is pleased that users find CHM's work relevant outside of its original intent. We hope projects like *Writing History* and the *Library Publishing Toolkit* galvanize this exciting trend in scholarly communication.

Participating in the *Writing History* open peer review process was a catalyst for the *AIE's* final stages of development. Receiving a reaction to the encyclopedia while it was still in progress allowed the development team to prioritize necessary actions in the months before the public launch. Given the novelty of a project like the *AIE*, future users were as interested in the technical and legal aspects of the project as the encyclopedia's archival content. An FAQ regarding copyright and citation methods was added to the final *AIE* website in response to questions asked by *Writing History* commenters (Appendix A). The concerns and questions raised during the open peer review also helped refine the user testing protocol used prior to the *AIE's* public release (Appendices B and C) and inspired a presentation at the American Library Association's 2012 Annual Conference (Judkins & Thomas, 2012).

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Reflecting on the open peer review process (“General comments on the book,” 2011), *Writing History* participants observed that essays appearing later in the electronic book received fewer comments than those appearing at the beginning. This might explain why the *AIE* case study, positioned in the book’s final section well below “the jump,” did not draw as many comments as other essays. Although this technical aspect had no impact on the value of the comments received (quality over quantity should be the watchword in such endeavors), those interested in pursuing similar open peer review projects might reflect on how interfaces should be designed to encourage conversation on a more egalitarian level.

User Testing

In early August 2012, two months before the website’s public release on October 10, the first users outside the development team tested the fledging *AIE* website. Initial user testing was carried out prior to the website’s official release to ensure the most polished final product at the launch event.

Jonathan McGlone, Digital Publishing Project Manager at the University of Michigan Library, was the primary author of the *AIE* user testing protocol (Appendices B and C), developed in collaboration with CHM’s Assistant Managing Director Alex Navarro and Digital Curator Julie Judkins. Questions were developed in respect to McGlone’s prior experience with user testing, guidance from Suzanne Chapman and Sonali Mishra of the Michigan Library User Experience Department, and concerns brought forth during the *Writing History* open peer review process. Two practice tests were conducted with volunteer staff members prior to the official tests and adjustments were made to the protocol as needed.

Because the prototype website was not accessible to the public and required a credentialed log-in, all user tests were conducted in person with testers from Metro Detroit. Every effort was made to recruit the most diverse pool of testers possible, despite the limitations. Candidate testers were recruited from colleagues with backgrounds in medical history and/or archives, interested members of the community, and librarians working at the University of Michigan’s Taubman Health Sciences Library. All communication with testers prior to the tests, from recruitment to scheduling, was conducted by e-mail.

...those interested in pursuing similar open peer review projects might reflect on how interfaces should be designed to encourage conversation on a more egalitarian level.

The testers' response to the prototype website was largely positive. Testers liked the website's design, found the content interesting, and said the website was easy to navigate. Negative comments prompted a change to the way document images were displayed and fonts and graphics were adjusted on the homepage to facilitate comprehension. User testing also revealed a bug in search capabilities from the homepage that was corrected prior to the website's release.

Conclusion

The *AIE* is a living document by design. The development team looks forward to increasing the digital encyclopedia's value in the coming years as new technologies and collaborations arise. We hope the *AIE* will prove useful to historians today and well into the future. Our goal is to maintain an innovative database that will inspire other scholars to share their research in a similar manner, making it accessible to a larger audience. Although the future of publishing is a moving target, the *AIE* development team looks forward to participating fully in this inspiring time for digital humanists and librarians alike.

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Appendix A

FAQ

Where did these materials come from? Where can I find them?

Please see our list of [Acknowledgements](#).

Why can't I download every image?

Although the majority of materials in the AIE are out of copyright or otherwise in the public domain, some are not. Any materials protected by copyright cannot be downloaded.

Please use any images you download from our site for personal or scholarly use only. If you wish to distribute these materials in print or electronically, you must receive permission. You can contact mplib-help@umich.edu for more information.

If I want to use images or text, may I do so?

These pages may be freely searched and displayed. Permission must be received for subsequent print or electronic distribution. For more information, please read the University of Michigan Library access and usage policy, or contact mplib-help@umich.edu.

Is there an official citation for the encyclopedia?

The preferred citation of our site is as follows:

["Name of Article or Item," if applicable] *American Influenza Epidemic of 1918 - 1919: A Digital Encyclopedia*. <http://www.influenzaarchive.org>. Date accessed.

Is there an official citation for items in the archive?

The preferred citation for items in the archive, such as a newspaper article, should look like:

“Grade Schools Will Not Open Here Tuesday.” *The Dayton Daily News*. December 9, 1918. 1, 12. American Influenza Epidemic of 1918 - 1919: A Digital Encyclopedia. <http://www.influenzaarchive.org>. October 10, 2012.

Can I contribute photographs or other similar original materials to the archive?

You may inquire about contributing materials by using the information provided on the [Contact the Editors](#) page. Submitting materials does not guarantee that they will appear on the website as we must abide by our collections policy and copyright restrictions, as appropriate. We appreciate your interest in contributing to our project!

Appendix B

Talk Aloud Protocol for American Influenza Encyclopedia Usability Testing (Takes about 45 min - 1 hour to complete)

Background: The AIE Project Team is conducting usability testing of this online resource in order to get direct feedback on use of the tool and ideas for improvements. We are asking that faculty, staff, and students assist us in this work, and their input is essential. The procedure below was established to get their key input efficiently and then allow them to proceed with their day.

1. Moderator should greet and thank the participant
2. Conduct them to the testing area.
3. Introduce the note taker. Give the participant an overview of why we’re doing this, ask if they have any questions.
4. Notetaker: Assign the user a code name, your [interviewer] last name with a number. For example, if Jonathan was working with a tester and she was his second tester, the code would be McGlone2.
5. Provide a brief training for the participant on the use of the resource and an overview.
6. Ask the participant to use the AIE to do the following:
 - a. Ask the participant to find a newspaper article mentioning the United States Public Health Service [“Correct” answer: Organization -- United States Public Health Service].
 - b. Ask the participant to find (San Francisco) Mayor James Rolph, Jr.’s papers [“Correct” answer: James Rolph, Jr. Papers, 1911-1930 (MS 1818) at the CA Historical Society]
 - c. Ask them if there is anything they would like to search for.
7. Ask the participant to think out loud as they work with the resource, make decisions, and perhaps get stuck doing what they want to do. Set them at ease: remind them we

are testing the website, not them, that they can't make mistakes here, and we want their honest feedback -- it won't hurt our feelings.

8. Note taker should begin taking notes as soon as the tester begins working with the site.
9. Offer assistance as needed, but let them work out problems if they can. Don't let them struggle or become frustrated. Each person will be different so remain aware of their progress and how it is going with them.
10. Follow up on tasks if it isn't clear they successfully completed it -- if they said they completed it, but it is not clear if they really did, ask them "so, you got it?"
11. Observations will include misconceptions, vocabulary, problems, and aspirations. Make quick notes on these.
12. After the tester has finished, the moderator should follow up the session with the AIE Usability Questionnaire. While you are making observations, you may already have answers to these questions, and if so there is no need to ask again.
13. Thank the tester and be sure to ask and answer any questions they may have.

Appendix C

AIE Talk Aloud Protocol Usability Questionnaire

Participant code name _____

1. What'd you think?
2. On a scale of 1 to 5 (1 being easy, 5 being difficult), rate the level of difficulty you encountered when searching and finding your documents?
3. If you used the browse feature, what'd you think? Was it easy or difficult to browse your given topic?
4. In what ways would this resource be of use to you? How do you envision using this in your research? Would you ever use it?
5. Were there any areas in which difficulties arose?
6. Would you recommend this resource to other people?
7. What advice would you give for improving this resource?