



Interviews

Analyses

Data & Rankings

What's Hot In... : What's Hot... : Swine Influenza – Lessons from History Identified by the Web of Science

WHAT'S HOT...

Swine influenza – Lessons from history identified by the *Web of Science*®

Utilizing the 110 years of coverage of international scholarly journals the *Web of Science* from Thomson Reuters can identify highly valuable research relating to Influenza Epidemics.

Simon M Pratt - Thomson Reuters
30th April, 2009

Introduction

The *Web of Science* covers over 11,000 authoritative scholarly journals and 130,000 academic conferences from around the globe, reflecting all fields of scholarly research, and is the world's leading citation database. The unique capability of the *Web of Science*'s citation coverage facilitates the linking between current research articles and those previous articles that were utilized by the researchers.

Additionally, citations can instantly uncover the most important high-impact research.

This article uses the *Web of Science* to uncover important research from the past that may help researchers investigate the current Swine Influenza outbreak.

Historic Trends

Searching article titles in the *Web of Science* using the Boolean search: "(influenza or flu) and epidem*" will find 1,477 unique articles. Looking at the year of publication of the articles, there is a distinct and large peak in the number of records published shortly after the outbreak of A/H1N1 influenza (Spanish Flu) in 1918-1919.

Figure #1: Number of articles per year relating to influenza epidemics

- ScienceWatch Home
- Inside This Month...
- Interviews

- Featured Interviews
- Author Commentaries
- Institutional Interviews
- Journal Interviews
- Podcasts

Analyses

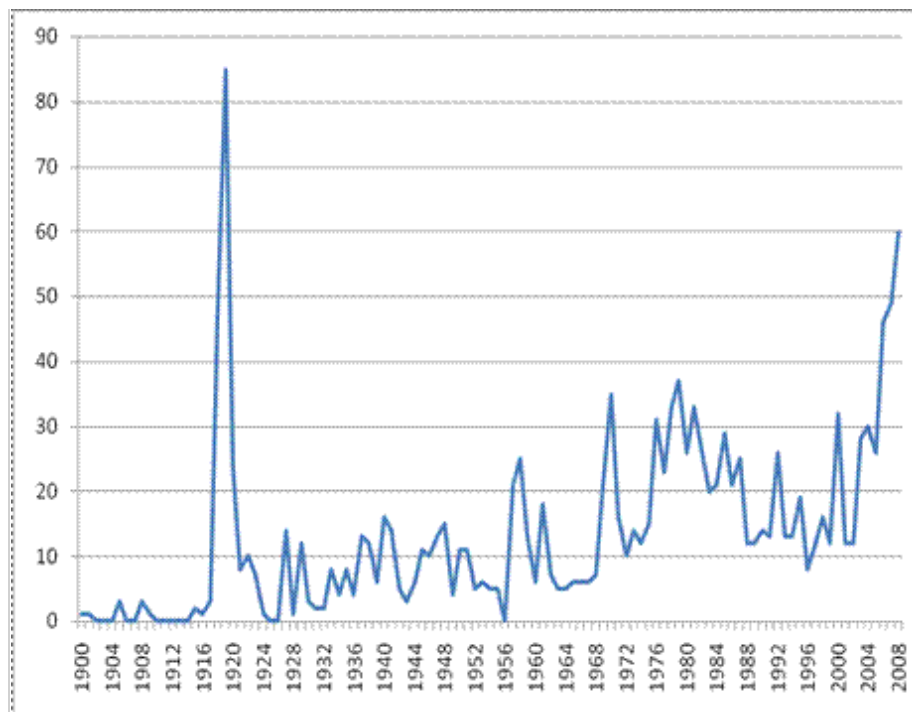
- Featured Analyses
- What's Hot In...
- Special Topics

Data & Rankings

- Sci-Bytes
- Fast Breaking Papers
- New Hot Papers
- Emerging Research Fronts
- Fast Moving Fronts
- Corporate Research Fronts
- Research Front Maps
- Current Classics
- Top Topics
- Rising Stars
- New Entrants
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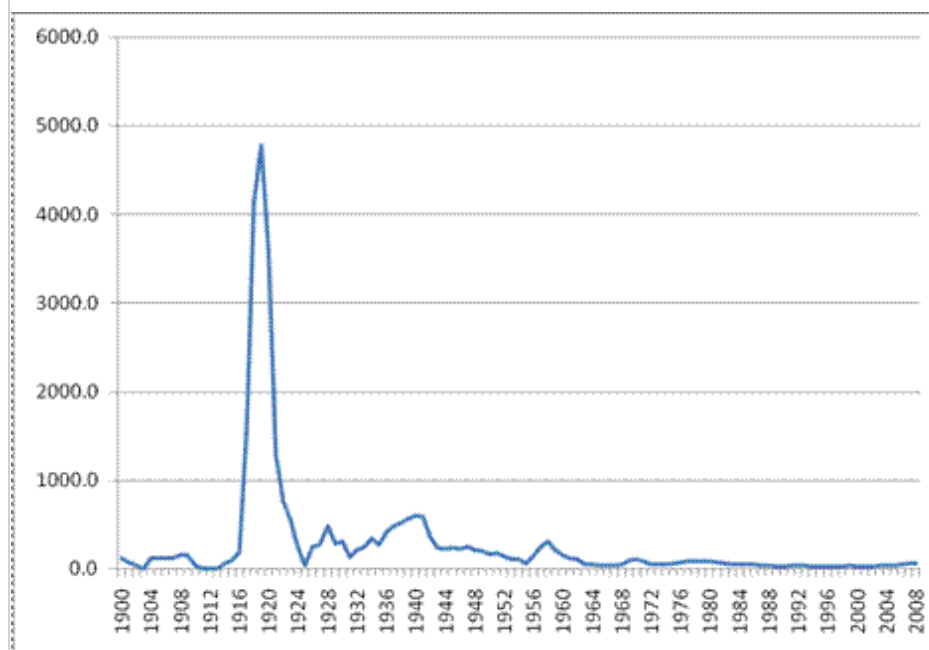
Although early indications¹ suggest that it will not have the virulence of the 1918 influenza epidemic, the 2009 outbreak of Swine Influenza is also the A/H1N12 strain, unlike the 1957 Asian Flu (A/H2N2 strain) or the 1968 Hong Kong flu (A/H3N3 strain)³. Both the Asian and Hong Kong Flu epidemics have also been succeeded by an increase in the number of scholarly articles published.

The more recent high activity in research may be related to the repeated outbreaks of the H5N1 strain of influenza, often known as bird or **avian influenza**, particularly during 2003 and 2005.

It is worth noting that in general terms the overall volumes of scholarly articles published, in all fields of research, have been increasing year on year. Therefore the size of the peak in the period of 1918-1924 is actually far higher when considered as a proportion of the overall body of scholarly research published in the same period. Figure #1 shows the publishing trend normalized to 2008 levels of publishing volumes.

Figure #2: Normalized number of articles per year relating to influenza epidemics.

Normalized to represent the number of articles that would have been published if the global research output at that period of time were consistent with 2008 levels



Source = Thomson Reuters – Web of Science®

Highly Cited Articles

Measuring the number of citations to an article gives an indication of how influential the article has been and can be a useful tool to quickly identify the most important and groundbreaking research. There are many relevant and highly cited articles published throughout the period.

Selected examples of interest are listed below:

Table #1: Selected highly cited articles from the Web of Science relating to influenza epidemics published between 1918 and 1980.

J. Houswort, A.D. Langmuir, "Excess mortality from epidemic influenza," <i>American Journal of Epidemiology</i> , 100(1): 40-8, 1974. Times Cited: 135
T.C. Eickhoff, I.L. Sherman, IL, R.E. Serfling, "Observations on excess mortality associated with epidemic influenza," <i>JAMA-Journal of the American Medical Association</i> , 176 (9): 776, 1961. Times Cited: 155
F.M. Davenport, A.V Hennessy, T. Francis, "Epidemiologic and immunologic significance of age distribution of antibody to antigenic variants of influenza virus," <i>Journal of Experimental Medicine</i> , 98 (6): 641-656, 1953. Times Cited: 237
F.L. Horsfall, "Neutralization of epidemic influenza virus - The linear relationship between the quantity of serum and the quantity of virus neutralized," <i>Journal of Experimental Medicine</i> , 70 (2): 209-222, 1939. Times Cited: 165

Many articles published in older literature continue to be cited in the present day, demonstrating that they are still of value to current research.

Conclusion

Thankfully, influenza epidemics are a rare occurrence, and the last epidemic of A/H1N1 strain was in 1918. Scholarly research from that period of time may be of value to researchers today—however, research from this period can be difficult to locate because most literature databases do not cover so far back in time. Furthermore, narrowing in on the relevant and important articles may prove difficult because the research has fallen out of institutional memory. The *Web of Science*, with its excellent retrospective coverage and powerful search tools based on citations, can be a useful aid to discovering this hard-to-locate information.

Cited References

- 1 [BBC, Swine flu: How serious a threat?](#) (2009).
- 2 [Chan, Margaret, Statement by WHO Director-General](#), (2009).
- 3 Adams, Mike, *How to Beat the Bird Flu: Strategies for Surviving the Coming Pandemic* (Truth Publishing International Ltd, 2005).

[back to top](#) 

[What's Hot In...](#) : [What's Hot...](#) : Swine Influenza – Lessons from History Identified by the Web of Science