The following is included to demonstrate my writing capabilities. The views expressed are not my own, but rather an editorial response to a prompt in one of my graduate level courses.

***Take a position for the statement "public health information should be available as a human right, when it's needed, where it's needed."***

***Introduction and significance***

*Whereas the peoples of the United Nations have in the Charter reaffirmed their faith in fundamental human rights, in the dignity and worth of the human person and in the equal rights of men and women and have determined to promote social progress and better standards of life in larger freedom…*

*-Preamble to Universal Declaration of Human Rights.*

*Everyone has the right to life, liberty and security of person.*

*-Article 3 of Universal Declaration of Human Rights1*

The United Nations drafted the Universal Declaration of Human Rights in 1947, a document detailing the western world’s consensus of what should be the rights of human beings. Explicit in the declaration is a human right to act and make decisions that protect one’s livelihood. An implicit point being that these decisions are non-harmful to others and don’t infringe on the rights of others. It is by this premise that the case is made that the dissemination of public health data to the public is a human right and worth advocating on its behalf.

Public health data may be thought of as any data pertaining to the health of populations. The free dissemination of public health data and its recognition of a human right lends itself to the mission of public health, with the goal of eliminating logistic and political barriers to data sharing. If public health data is recognized as a right, then it stands to give this right to the public health community who can work more quickly to respond to public health challenges.

Therefore, not only does a health-conscious citizen stand to benefit by navigating regional outbreaks or suspected disease outbreaks in their city. Civilization stands to benefit from the recognition of public health data as a human right. The largest increases in human health have been due to policy change, it is suitable to suggest that the recognition of public health data as a human right will benefit the public health mission and the lives of many through the world.

***Literature Review***

A brief overview of the history of public health information is necessary to understand where we are today in public health surveillance. Dissemination of public health data has precedent throughout human history. It has always been dependent on the development of novel data keeping and arithmetic tools. Initially public health interventions were based on simple observation of health-related problems and exercising interventions based on observation alone. This was exemplified best through the documents and teachings of Hippocrates, who drew connections in his work between living conditions and health outcomes.

In the 19th century there were two notable examples of sophisticated data collection and analysis to tackle public health problems. The first of these was the innovations of English scientist Florence Nightengale, who confirmed the connection between morality and sanitation in the ranks of the British army. Nightengale and his team compared death rates for non-combat-related illness in the army to rates in a reference population and published one of the ﬁrst uses of graphics to present public health data. A likely more well-known story is that of John Snow, whose mapping of cholera cases in the Soho section of London was one of the first rudimentary geographic information systems2. His surveillance system of cholera outbreaks would prove itself to be a useful part of British public health, as in 1866 it was noted that cities without a system for monitoring and combating cholera had higher mortality rates in the epidemic of that year*.3* It was in the 19th century that the modern public health surveillance infrastructure would begin to develop, growing exponentially in the 20th century due to technological innovation. For the purposes of this essay, we will now focus mostly on the development of public health information infrastructure in the United States as it has been a leader for public health globally.

In the ﬁrst part of the twentieth century, the system for collecting birth and death records was being established and standardized. However, data about nonfatal illnesses was difﬁcult to obtain and sparsely available. Early attempts at collecting data were limited. A major surveillance project was undertaken by the U.S. Public Health Service in the 1930’s, funded by Work Projects Administration (funds allocated to stimulate the United States economy during the Great Depression). This project however was limited by the methodological standards of the day, lacking probability sampling and standardized questionnaires.4

Policy direction would then take its lead from the National Health Interview Survey (NHIS) which first reported its ﬁrst results in 1957. The National Health Interview Survey (NHIS) is an annual, cross-sectional survey intended to provide nationally representative estimates on a wide range of health status and measures among the population of the United States. Each annual data set can be used to examine the disease burden and access to care that individuals and families are currently experiencing.

As survey data was being collected in the 20th century, innovations and improvements in medicine and healthcare access had reduced the mortality of infectious disease. Chronic diseases such as heart disease, cancer, and stroke became the major public health challenges to be faced by national agencies. The complexity of interventions to tackle these problems necessitated an information infrastructure that can collect and share data about multiple symptoms and conditions. These specific challenges faced led some public health agencies to develop the concept of data linkage.5 However, in the mid-20th century the prospect of a true interoperable system was a daunting task.

***Discussion***

Often there are two main charges leveled against the notion of free data dissemination. The first being that the logistics of the endeavor make it a far-fetched concept, the bureaucracy of public health, the diversity of data standards and the lack of communication between data sources make free data exchange a logistical nightmare. This charge existed even in the 1930’s and since then much progress has been made to remedy those concerns. Another charge is that technology is not yet at a point where data can be disseminated and freely exchanged. This point will be addressed later.

The practitioners of public health in the 20th century recognized that the complexity of health problems called for an information infrastructure that could consolidate data in a truly holistic manner. However limited resources and the immediacy of the health problems called for independent system development. Though standards were provided by federal agencies to help make data sets form state to state comparable, there was still tremendous difficulties in sharing and obtaining this data. Often data had to be entered in more than once into multiple systems.

However the possibility of true data system interoperability came closer to fruition in the 1990’s when the Association of State and Territorial Health Ofﬁcials (ASTHO), and the National Association of County and City Health Ofﬁcials (NACCHO) opened a discussion of their system problems.6 In response to the concerns raised at the conference, CDC and HRSA began allowing local health departments to use funding to implement information systems that were integrated across multiple programs. The initiative taken by the federal government to help update the existing information structure proved to be a very beneficial one, as adoption of standards for health information, developed by national organizations, allowed the exchange of data between states. This mobility of data allowed public health agencies in America respond to a reality that siloed data schemes were missing, that is adaptation to tendencies of its population to be mobile across state lines. The responsiveness and benefits that presented themselves in this innovation gives credence to the argument for the free mobility of public health data.7

The increasing use of data standards in the collection of data such as HL7®, LOINC®, and SNOMED CT®, help set the stage for making data transferable between public health agencies and the public. However, a concession must be made, that adaptation of standards by multiple organizations by a consensus can be difficult. Change in the way that data is collected costs money and time for an organization. There can be significant hurdles in urging a partner to expend resources to adopt a standard that superficially yields more benefits for a population that they do not directly serve.

An example of this would be the adaption of the electronic laboratory reporting (ELR) standard, where public health agencies requested that laboratories report their data per a specific standard. Often the laboratories had to fund the adaptation of the standards themselves. In this case, as exemplified by the previous examples, a possible way to overcome this challenge is the funding of standards implantation by larger authorities (as the CDC has done throughout its history). Regardless of the challenges faces by the logistics of data sharing, there has been progress made in the adaptation of data standards. Federal funding to facilitate adaptation of a standard and advancements in communication technology have made data standards more feasible and effective.

Through the implantation of standards and the technological innovations of web-based applications and mobile devices, the reality of free data dissemination becomes closer to reality.9 Web-based interfaces have become increasingly common in public health data reporting. A health department can develop a web interface that would provide direct access to its systems and users can update the database through the web interface. Web-based interfaces permit public health agencies to open their systems to direct data entry and direct data access by partners, instead of having to create complex messaging protocols between systems.10 The advantages of web-based interfaces include minimal investments in infrastructure as access to this database would only requires an Internet connection.

The usefulness of web-based database interfaces is only increased by the disruptive innovation of mobile devices and computing. The possibilities for data exchange are expanded though the utilization of mobile devices creating new opportunities for data exchange. An example of the utilization of mobile devices can include an epidemiologist improving documentation by being able to complete a client encounter record during an interview. Patients can also benefit from the use of mobile devices as a support for more continuous monitoring, by transferring data from self-monitoring devices directly into their provider’s health electronic record.11

The introduction of mobile devices into the public health data network reduces the cost of technological infrastructure. This stands to bring significant benefits in public health surveillance as it relates to countries that lack the resources to invest in technological infrastructure. As evidenced through the history of mobile computing we can anticipate costs that are associated with mobile devices to decrease. Mobile devices allow more efficient work processes, as it allows providers to potentially have access to the entirety of a patient’s health record. Public health professionals can also navigate and update databases with relevant information that can be accesses by professionals just as easily. We are at a unique time in history where we now possess the technology to update and distribute public health information in ways that were not possible in the past.

A concern that often exists about free data exchange in any context is that of privacy. It would be prudent to take these concerns into account whenever developing or modifying information infrastructure. There exists precedent in protecting the privacy of individuals in public health practice, as evidenced in the privacy maintained in the reportable diseases registry maintained by the CDC. Privacy as it relates to public health basis is based on “fair information practices,” a set of ideas deﬁned in a 1973 study and incorporated into the federal Privacy Act of 1974.12 They represent a set of principles that deﬁne the responsibilities of an organization that holds conﬁdential, identifying information about individuals. It is difficult now to truly anticipate the privacy issues that may arise in the long term, but the public can be reassured that at all levels of public health there is already a large commitment to privacy and many legal protections that protect patients.

***Analysis***

When the issue of immediate data dissemination is brought up, logistical and technical issues are often cited as reasons that the endeavor is unfeasible. However, much of the aforementioned evidence suggests that the interoperability of data systems and technology can make free data exchange a reality. The case for immediate data dissemination to public health professionals should be evident, as quick exchange of data contributes to public health causes around the world. With that said, the issue arises of how accessible should this data be to the layman and how much of this data?

Throughout history public health data has been mostly in the hands of practitioners but in the age of the internet more than ever has one been able to navigate and view public health data in one form or another. Though this has presented challenges in terms of the layman’s capacity to interpret data, the alternative of hoarding public health data currently creates skepticism for some of the public.

Given the relatively innocuous subject matter of public health data, it’s unfair to use the examples of Ebola hysteria in 2014 or H1N1 in 2009 as justification for not relaying public health data. With any delivery of data there also is an opportunity to provide context and information, removing the leverage that less qualified entities may have in interpreting public health problems.

***Conclusion***

Much of this paper has discussed the possibilities of free data dissemination as it related to interoperability between public health agencies and partners. However, I wish to convey that the individual patient is in fact a partner in this exchange of data, and is a beneficiary of the technical and logistic improvements that have been made in the realm of public health informatics.

True public health data transparency has never existed in the modern world, it’s complexity and the large size of the data involved as made that a difficult task, until recently due to the efforts in technology and interoperability. If every human being has the right to make decisions to further their own livelihood, as described in the Universal Declaration of Human Rights, then it stands to conclude that public health data should be available to all organizations and persons.

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