



Making the Case for Electronic Case Management in Public Health

Nancy Leidelmeijer
COO

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Making the Case for Electronic Case Management



Public health is about interventions that prevent disease from occurring... In a sense, public health is the heart disease that never developed, the epidemic that didn't happen, the outbreak of foodborne illness that never occurred, the child that would have developed asthma, but didn't. Public health is the disaster that didn't happen.¹

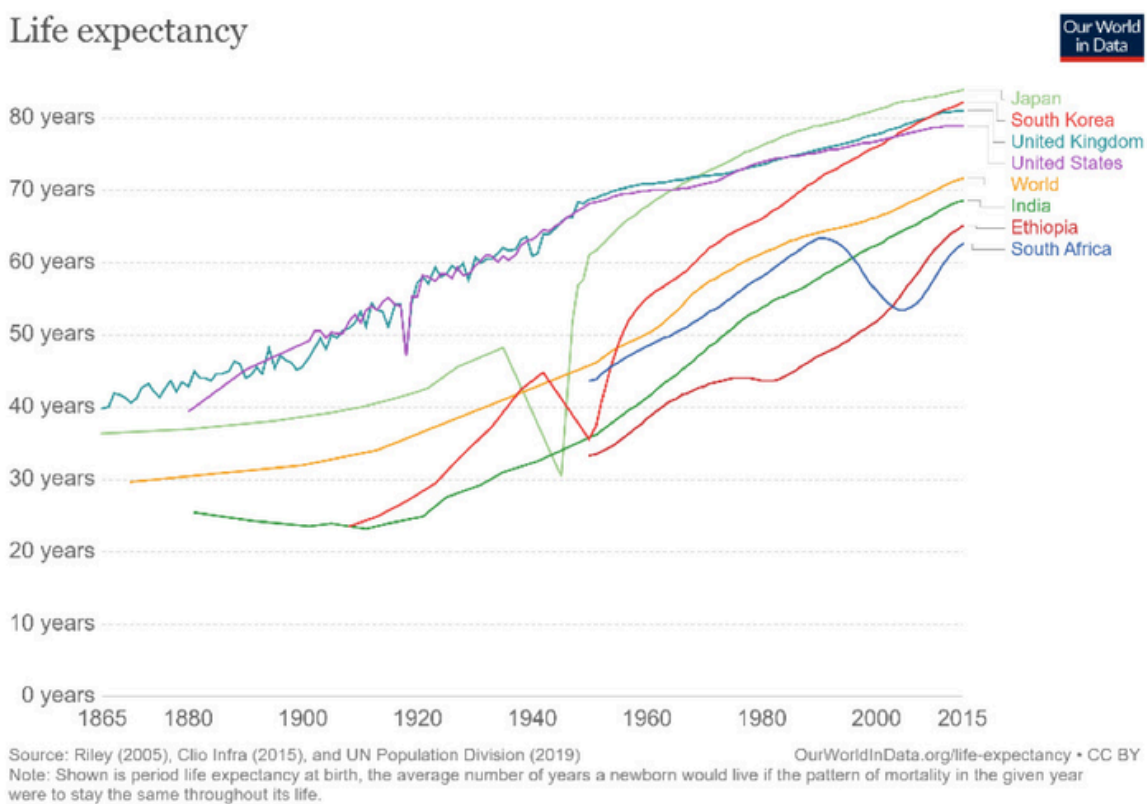
Nowhere is the case for electronic case management to be better made than in public health. First, let's revisit the history of public health management in the United States and some of its key elements ¹.

¹ <http://sphweb.bumc.bu.edu/otlt/MPH-Modules/PH/PublicHealthHistory/publichealthhistory9.html>

1.0 A Brief History

Public health as a movement in the United States began in New York in 1866. That year, the first public health agency in the United States, the New York City Health Department was established ². In that same year, the successful efforts of the New York Board of Health to contain a cholera outbreak created an awareness of the benefits of a systematic

approach to public health. At that time, life expectancy in the United States was less than 40. In fact, as illustrated in the graph below, until the mid-1800s and for centuries before that, worldwide life expectancy was less than half of what it is today.

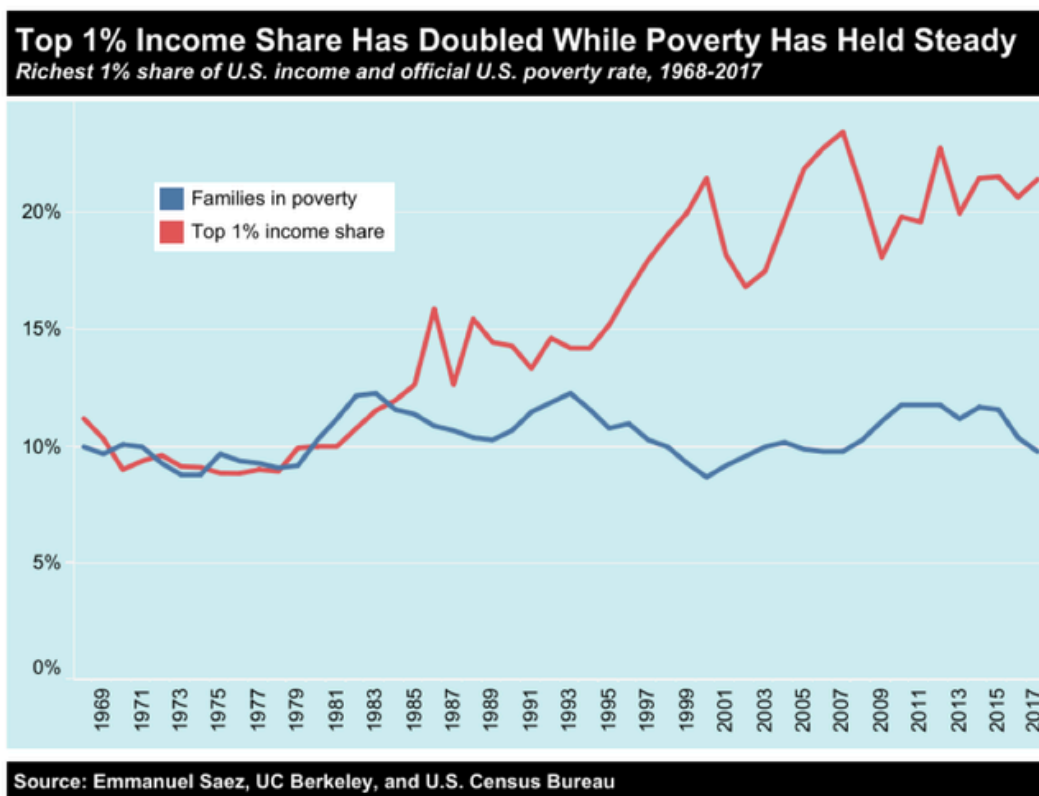


² Institute of Medicine (US) Committee for the Study of the Future of Public Health. The Future of Public Health. Washington (DC): National Academies Press (US); 1988. 3, A History of the Public Health System. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK218224/>

Breakthroughs in medicine and an increased understanding of how diseases are transmitted resulted in movements, both in Europe and the United States, toward government regulation of various areas, including public works, vital records collection (i.e., births, deaths, causes of death, etc.), and the mandatory reporting of incidents of illnesses deemed to be a threat to the general population.

In less than 150 years, life expectancy worldwide has increased by nearly 60%; while it has nearly doubled in all countries where a robust public health system has been implemented, including the United States. While public works, vital statistics and other factors that influence the overall health of the public are so much a part of the fabric of our infrastructure that everyone benefits, those who are most impacted by the work of public health service providers, (i.e., doctors, nurses, social workers) are those who can least afford these services.

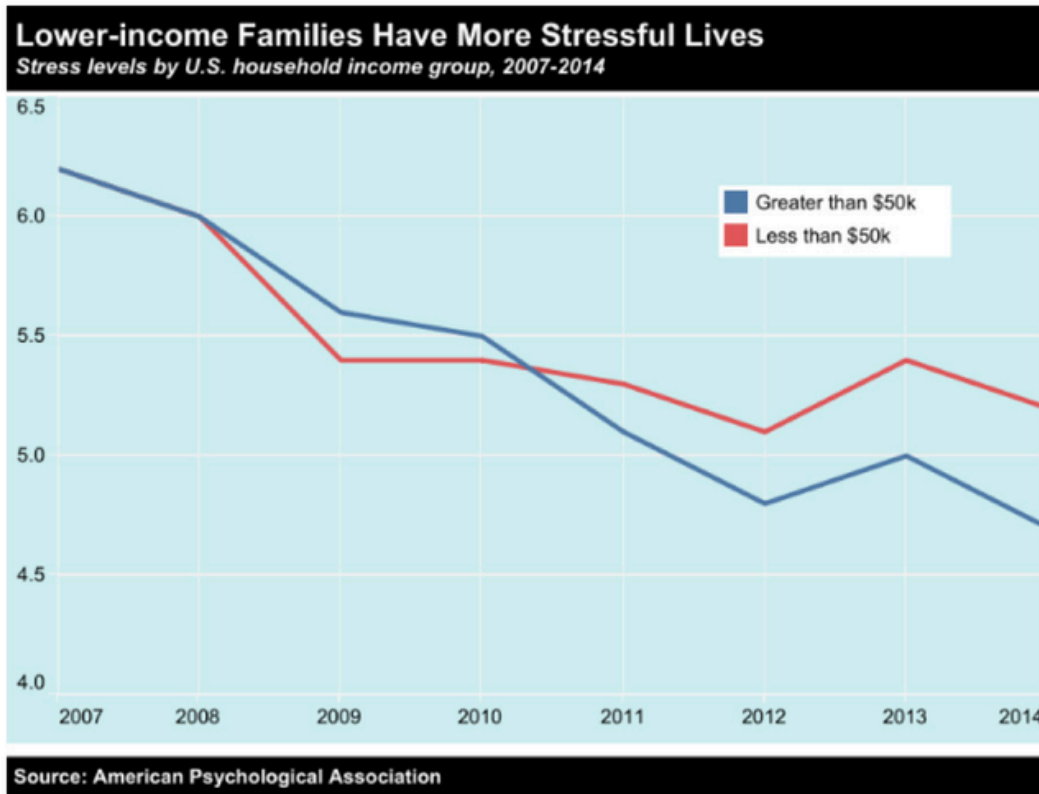
Public health nursing, pioneered by Lillian Wald, began only a few years later, with Wald founding the Henry Street Settlement in 1893, and later serving as the first president of the National Organization for Public Health Nursing, founded in 1912 ³.



³ National Organization for Public Health Nursing records, Barbara Bates Center for The Study of The History of Nursing, University of Pennsylvania

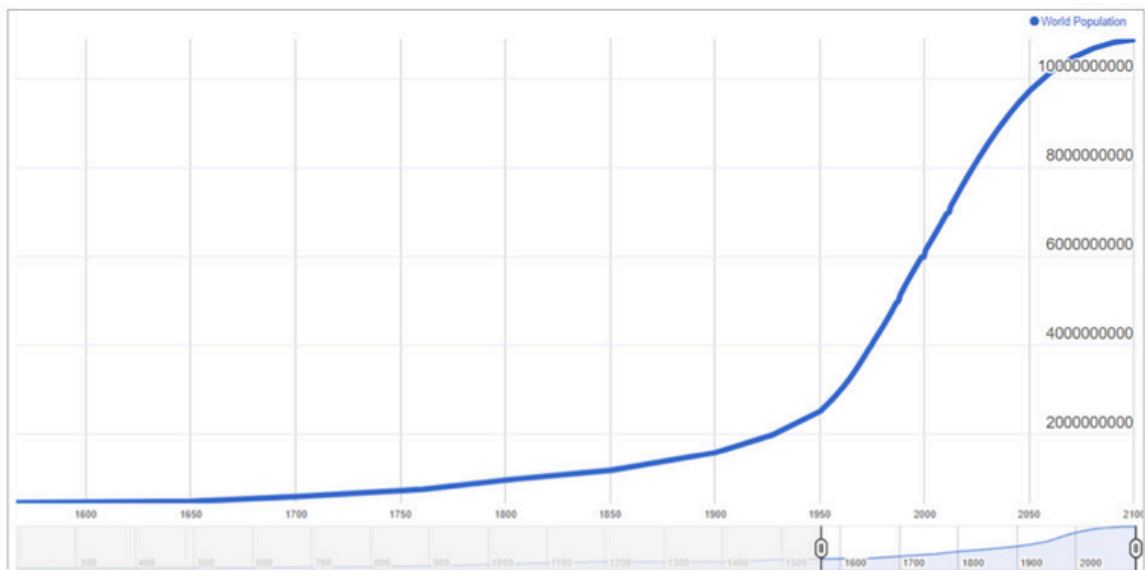
The ever-widening gap in income contributes to stress levels among blue-collar and other low-income households, which increases the rates of high blood pressure, heart disease, diabetes, obesity and a variety of other health problems, ultimately leading to a disparity in life expectancy between

the rich and poor. Among this ever-growing segment of the population, the inability to afford healthcare adds to the overall stress, further contributing to health problems, and a vicious cycle is continued ⁴.



As life expectancy, population, and income disparities increase, so will the need for public health and the demands on public health service providers. Increasing caseloads beg for solutions beyond paper files and sticky notes.

⁴ <https://inequality.org/facts/inequality-and-health/#us-inequality-health>



“

A tremendous change occurred with the industrial revolution: whereas it had taken all of human history until around 1800 for world population to reach one billion, the second billion was achieved in only 130 years (1930), the third billion in 30 years (1960), the fourth billion in 15 years (1974), and the fifth billion in only 13 years (1987).”⁵

⁵ <https://www.worldometers.info/world-population/>

2.0 Barriers and Keys to Success

As public health has transitioned from a fee-based model to a value-based and evidence-based model, the role of the public health nurse has evolved. Rather than merely treating illness and disease, the current, more holistic, multi-pronged approach to public health focuses on gathering personal, health, and demographic data, identifying risk factors, assessing child-care, transportation, and educational needs, establishing goals, referral networking, advocacy, and the timely and efficient coordination of services. As a result, the role of the public health nurse as case manager has expanded.

Barriers to successful case management in public health nursing include duplication of efforts and services, fragmentation, and paper. Paper files, filing systems, Excel spreadsheets, sticky notes – nothing searchable; nothing easily transferred from one provider of services to another – nothing about the paper element involved in case management is conducive to the ease of sharing data, the elimination of redundancies, or the integration of disparate data.

Keys to successful case management are accessibility of information, elimination of redundancies, and ease of sharing data, all of which are easily accomplished through

the automation of manual processes.

Many local governmental agencies have paper-based case management systems, or electronic case management systems (ECM) that were developed a decade ago or more. Many of these systems are being held together with super glue and band-aids, figuratively speaking. Making the case for a new or upgraded ECM can be a daunting task at a time when funding is scarce, and budgets are heavily scrutinized in government, but the case should be made because the many benefits are worth the effort.

Insights from the Field

In a paper first published in 2014 in Public Health Nursing, the authors of the paper reported on the results of a study in which 19 public health nurses (PHN) and nurse managers (NM) from two local health departments (LHD) volunteered to conduct an information needs assessment, create a conceptual design, and conduct a preliminary design validation ⁶.

The study sought to answer two questions: What are the information needs of PHNs and NMs involved in the delivery of health services through home visits? How do PHNs and NMs from different LHDs perceive

a conceptual integrated information system design created to support their information needs?

» a reports function and proposed list of reports

Several key areas of agreement among most of the participants in both LHDs were identified:

While there was a consensus that the system should run on a laptop computer, some participants preferred not to take laptops into client homes, preferring to document in their cars. Additionally, there was support for having the system available on smart devices.

- » the need for managers to access overall case load;
- » emphasis on the need for a dynamic flexible system to accommodate frequent changes in documentation due to changes in work funding;
- » the need for a system that could flexibly link outcomes of services delivered to clients to reduce workload for reporting to sponsors
- » one-time data entry of client data to facilitate collaboration and reuse of data
- » integrated scheduling;

Perhaps the biggest takeaway from the study was that there was no shortage of overworked PHNs willing to volunteer their time to participate in a study designed to identify ways in which technology can be harnessed to support their work.



⁶ Reeder, B., Hills, R. A., Turner, A. M. and Demiris, G. (2014), Participatory Design of an Integrated Information System Design to Support Public Health Nurses and Nurse Managers. *Public Health Nurs*, 31: 183-192. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4061981/>

Benefits of Electronic Case Management

ECMs store all client-case information and collaborations in an electronic data storage system, whether cloud-based or otherwise. This ensures better recordkeeping as all data is organized and managed in one place. Confusing Word documents or Excel spreadsheets can be eliminated, which results in a reduction of paper. All data is collected and stored in the database.

With the advent of the internet, remote access to information has become essential. Data can be securely accessed by authorized users wherever they are, whether it's across town, in a different city, or on the other side of the globe.

By using an electronic case management system, it's easier to collaborate on a particular case. Everyone involved in the resolution of the case can easily access information and work to resolve their clients' issues. This sort of collaboration increases productivity and work efficiency. It empowers team members to create the best possible solution for a case, while documenting from the same source.

Electronic record-keeping ensures transparency. The supervising case manager can monitor each step in the process, as well as the various other case managers involved in the collaboration. Client risk assessments can be easily performed, and client needs can be easily addressed.

ECMs also expedite the reporting process. Audit trails make it easy to analyze trends that can affect program direction. They also allow easy retrieval of metrics and analytics, which can be used to optimize the resolution of future cases.



3.0 Performance and Outcomes Measures in Public Health

Federal, state, and local public health agencies have special responsibilities for protecting and improving community health. The Future of Public Health (Institute of Medicine, 1988) defined public health's core functions as assessment of health status and health needs, policy development, and assurance that necessary health services are available.

Today, most local public health agencies conduct an annual Community Health Assessment, which establishes the Community Health Profile for the agency. The assessment is a tool to determine the health of a community and to identify priorities for improving health. A pattern of wellness or disease emerges as a community examines one client at a time. Information from the community health assessment provides insights into local health problems, identifies resources to improve health outcomes, and informs policy decision-making⁷.

The Public Health Accreditation board defines community health assessment as a systematic examination of the health status indicators for a given population that is

used to identify key problems and assets in a community. The ultimate goal of a community health assessment is to develop strategies to address the community's health needs and identified issues(...) ⁸.

The move towards performance and outcome measurement is prevalent across the globe, and benefits the populations being served. Case management programs exist so they may have a positive impact on health outcomes related to the quality of life, independence, functionality and general well-being of clients. However, measuring outcomes is a multifaceted and complex process. Consequently, not all case management programs measure and quantify their effect on health outcomes in their community. Particularly, paper-based and outdated data systems are not conducive to collecting and analyzing health outcomes.

ECMs provide the best approach to measuring and achieving client outcomes and program goals. They are a powerful tool in capturing client outcomes which can generate a wealth of both qualitative

⁷ Santa Barbara County Public Health Department - Community Health Assessment, 2016

⁸ Turnock B. Public Health: What It Is and How It Works. Jones and Bartlett, 2009, as adapted in Public Health Accreditation Board Acronyms and Glossary of Terms Version 1.0 CDC-pdf, July 2011.

and quantitative data about clients and the services being provided to the benefit of their well-being and the community's health at large.

Ideally, an ECM should allow each individual case management program to define its own measures for determining outcomes as it relates to that program. If the data is captured in the system for individual clients, it can easily be reported on to provide a snapshot of the overall outcome in a community for all clients being case managed.

These measures allow public health agencies to assess the effectiveness of their programs and case managers' work in those programs. It provides important data for policymakers and the community served by

public health professionals. It is essential to optimizing public health programs and the care provided by its staff. These measures offer insight into program quality and client progress, identify areas for improvement, and increase transparency. Performance monitoring is also integral to value-based programs. The data that an ECM helps manage to support client care can be re-used for various types of measures, alone or in combination with other types of data, such as results of client surveys. Measures empower providers to assess the quality and results of their current program processes and to prioritize improvements to those programs.



4.0 Benefits of Paperless Auditing

Audits of programs, including case management documentation, are a normal occurrence in the world of public health today. In government, audits are conducted at all levels: local, state, and federal. Public health programs such as Maternal Child and Adolescent Health (MCAH), Tuberculosis (TB), California Children's Services (CCS), Adolescent Family Life Program (AFLP) and more are audited not only for financial content, but for program compliance which includes a review of case manager notes, program outcomes, and client data. ECMs should make it easy for state and federal auditors to review documentation, while allowing them access only to the requested information. An ECM is particularly beneficial in an audit for the following reasons:

Easier retrieval

This is crucial when facing an outside audit. Gathering paper documents can be time-consuming and frustrating, particularly when audits occur for documentation from several years in the past. An electronic system helps agencies store and organize documents that makes them easy to locate in the event of an audit. This can also be useful for internal audits or peer review audits to help an organization assess and improve its own performance and compliance.

Audit Trails

An audit trail provides for a chronological record, or evidence, of a particular set of historical events. The audit trail reflects the reliability of the program's compliance and integrity in an organization. It can be used to validate and monitor activity. An ECM provides the vehicle to track this essential information through date and time stamps and the chronological steps that were taken to provide a service.

Consistent content

Ensuring that public health case manager notes are consistently formatted and controlled is not easy. Nurses and other case managers all have their own way of filing and documenting. Getting them to use the latest templates, or ensuring that new revisions are created from the last approved version in a paper file, isn't easy. An ECM provides for consistency in defining needs, goals, outcomes, and resources. It essentially provides a template from which case managers can build their own individualized case file.



Easy and widespread access

Paper-based records can be a record and archive nightmare. They limit access to a specific time and place: only one person can use a record at one time and only in one physical location. Making copies can be expensive and time-consuming. Duplication may also cause version control problems and confusion about which document is the official record. Electronic records are easily shared and provide widespread access to all authorized users. Users can access these records at the same time, even if they work in different locations. ECMs also make it possible for public health agencies to share their case records with auditors anywhere at any time. Considering scarce resources in government and the distances between agencies and their auditors, providing mobile or remote access to information to be audited can save time, money, and frustration for the agency being audited and the auditor.

Auditing Capabilities

A well-designed ECM can allow an organization to regulate what information an auditor may access. It is important to ensure only those records that are requested by the auditor can be accessed. The information should be available at a read-only level so that vital information cannot be accidentally changed. ECMs encourage more accountability and promote compliance across the organization. As a result, public accountability and transparency are enhanced.

In short, the paperless audit capabilities of an ECM eliminate travel costs, while expediting the process for producing requested documents to the auditors.

5.0 Conclusion

Streamlined to generate consistency in documenting client information, ECMs provide easy accessibility for internal and external (audit) staff at various locations and on the go. They are a useful tool for reporting on performance and outcomes measures, as well as saving time. They are vital to the support of case managers in their work. Last, but by no means least, as workplaces across all industries work toward increased sustainability, it is important to note that ECMs also comply with the Government Paperwork Elimination Act of 1998⁹. In short, ECMs are the gateway to the future of public health case management.

⁹ The Government Paper Elimination Act of 1998
https://itlaw.wikia.org/wiki/Government_Paperwork_Elimination_Act_of_1998



Nancy Leidelmeijer | COO

t: (844) 356-2424

e: support@unacasepro

w: unacasepro.com