

# Improving Efficiency in Health

How public health and social services organizations are realizing efficiency gains through the use of technology that liberates data, improves collaboration, and provides a connected approach to citizen and patient care.

White Paper

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## Learn from the examples of other public health and social services organizations, including how to:

- Cost-effectively connect the fractured pieces of the health ecosystem
- Turn health data into information to reveal hidden trends, introduce efficiencies, improve service quality, and empower citizens to manage their own wellness
- Use the “measure-monitor-manage” approach to quickly reach required levels of efficiency and effectiveness
- Use collaborative and data-sharing technologies to enable diverse parties — public agencies, clinics, and providers — to improve services and citizen health

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## Executive Summary

- Public health organizations are charged with improving the quality of care and developing more effective health policies while also creating a financially sustainable healthcare model for the future.
- Government and social services agencies need ways to access, share, and analyze data that traditionally is locked up in isolated systems. The use of familiar and intuitive tools and existing platforms in the form of business intelligence systems, dashboards, and portals can help.
- Enable diverse parties—including agencies, clinics, and providers—to collaborate and participate in data-driven decision-making, which leads to a “culture of information.” Such a culture enables workers to provide more holistic care and services and to discover hidden trends that in turn lead to better health outcomes, more self-sufficient patients and citizens, and more efficient care and services.
- Transforming to a culture of information relies on three interdependent activities: measuring processes, outcomes, and quality; monitoring at all levels; and managing human and other assets better.
- Measuring processes and outcomes, monitoring activities, and managing assets improved results at the Lincolnshire Partnership Foundation Trust and the West Lothian Council in the United Kingdom; the Tasmanian Department of Health and Human Services in Australia; the Ministry of Health in Bahrain; and the Veterans Health Administration, the Iowa Department of Human Services, and Aspiranet in the United States.

## A New Health Model

Around the world, public health and social services agencies are under pressure to meet new levels of efficiency and effectiveness. They must improve the quality of care and services delivered to their country's patients and citizens; develop a sustainable health model for the future; and empower patients and citizens to manage their own health and wellness.

Many organizations will find it difficult to meet these new demands. However, there are public health and social services agencies that are not only reaching required levels of efficiency and effectiveness but also doing so without investing a significant amount of time or huge expenditures of resources. These organizations are taking a new approach to delivering services that revolves around three components: measuring, monitoring, and managing.

Following this three-pronged approach, leading organizations are improving the delivery of health services by leveraging established computing platforms to connect the disparate parts of the health ecosystem. By gathering, analyzing, and sharing data that was previously locked away in isolated computing systems, they are enabling better collaboration among the many members of the health ecosystem and improving the decisions that surround the delivery of services. Using familiar tools, public health and social services workers can discover and discuss hidden trends that lead to better outcomes. Indeed, without this approach, public health and social services agencies simply cannot reach the levels of efficiency that are required today in public health and social services. The three components of this new approach are detailed below:

**Measure.** Systems collect lots of data, but unless that data is turned into information it does not offer much value to organizations. Consider a patient or citizen who is enrolled in programs across multiple agencies, each with different case managers who keep separate records. By pulling all of this separate data together, organizations can look at citizens in a holistic way rather than just as one portion of a program or system. Combining and analyzing data from stand-alone systems can turn that data into information and insights, thereby providing an accurate measurement of processes, outcomes, and quality. Remember, "if you cannot measure it, you cannot manage it."

**Monitor.** By leveraging combined information—and properly measuring it—organizations can see how they are performing. They have the ability to accurately gauge their efficiency at multiple levels, from caseworkers to supervisors to top-level managers. To achieve this goal, organizations need to set key performance indicators (KPIs) and then have the discipline to monitor ongoing operations. The resulting information, often viewed through a dashboard, can help caseworkers and supervisors monitor workloads and patient/population health. It can also help administrators monitor staff, resources, patients, and citizens—looking for areas that need improvement and running programs more efficiently.

**Manage.** When organizations measure and monitor effectively, they can better manage the health of individuals and families under their care—through better case management, managed KPIs, and tailored programs—and the health of the organization as a whole. Good management maximizes the efficiency of human and other assets necessary to reach organizational goals.

*"Health and social services programs are paying dearly for information silos. The cost can be measured in both dollars and lives."*

– Harold D. Miller,  
Executive Director,  
Center for Healthcare  
Quality and  
Payment Reform

# A Culture of Information Helps Save Lives, Improves Performance

Experts believe that disconnected data systems contribute to many of the fundamental problems experienced by public health and social services agencies.

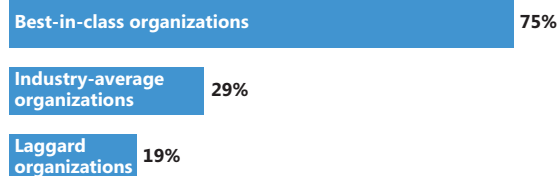
"Health and social services programs are paying dearly for information silos," says Harold D. Miller, Executive Director of the Center for Healthcare Quality and Payment Reform (CHQPR), a policy center focused on improving the quality and value of healthcare delivery. "The cost can be measured in both dollars and lives."

According to a study by PricewaterhouseCoopers' Health Research Institute, some \$1.2 trillion of the \$2.2 trillion that the United States spends on healthcare is wasted.

"The Institute of Medicine says 100,000 people a year are dying of mistakes," adds David B. Friend, M.D. and CEO of consulting firm Palladium Group Inc. "That's the equivalent of a 747 dropping out of the sky every other day."

## Free-Flowing Information

A greater percentage of top-performing healthcare organizations (as determined by such measures as patient satisfaction) have established a self-reported "culture of information," in which information flows freely. (Percentage saying they have established organization-wide information cultures.)



Source: Aberdeen Group

Figure 1

Organizations that are able to both share information freely and develop "cultures of information" perform at much higher levels than those that are unable to share information (see Figure 1, "Free-Flowing Information," at left). A much-lauded example is the Veterans Health Administration (VHA), which was once considered one of the worst healthcare providers in the United States. The VHA transformed itself by developing performance management capabilities and dispersing information widely so workers can easily measure and monitor how their individual efforts contribute to meeting the entire organization's goals.

It is a daunting challenge to manage an organization that treats five million patients a year at 153 medical centers, 724 outpatient clinics, and more than 200 "Vet Centers." The VHA's solution: an integrated health information system with a framework for using performance management measures to improve quality, including a world-class electronic medical records system.

The integrated system provides access to information that was not previously available and uses external benchmarks such as those from the Centers for Medicare and Medicaid (CMS) to evaluate the quality of care and services. Each location is required to meet minimum performance levels, called "floors," or it is deemed underperforming.

"Without visibility into performance, we can't understand how we are doing and how to feel about it," says Jack Bates, Director of BI and Performance Management at the VHA.

The VHA started by identifying key measures for the year, such as providing consistent care outcomes, and then publicized those metrics across the VHA so workers had a clear idea of what it wanted to achieve. Studies indicate that close to 100 percent of employees knew about the performance measurement program and that most knew of the specific measures related to their individual tasks.

*"We can compare demands for service versus the capacity of the organization, see where any bottlenecks are, and brainstorm ways to alleviate them."*

– Steve Lidbetter,  
Deputy Director of  
Performance and Information,  
Lincolnshire Partnership  
Foundation Trust

Development of a fact-based culture, where workers are provided with ways to monitor their own performance and then are held accountable, has resulted in impressive and tangible improvements. For example, the VHA prescribes medication to patients with an accuracy of 99.993 percent, a standard that exists nowhere else in American healthcare.

"We're serving twice as many people, at the best quality standards, with no budget increase," Bates says. "This result is borne out by studies performed by the Centers for Medicare and Medicaid, which compare a number of private and public healthcare systems across a number of performance metrics," he adds.

## Greater Visibility Improves Efficiency

A culture of information helps to liberate data, thereby allowing organizations to gain visibility into how they are performing. This approach can be done via executive dashboards, which help steer the day-to-day operations of an agency while looking at variations in services, processes, quality, and expenditures. Caseworkers are able to gain insight into their own caseloads, and supervisors can look across all of their workers to see trends, such as the percentage of open cases and those at risk. Such an approach also allows the organization to identify areas for improvement and run programs more efficiently.

Lincolnshire Partnership Foundation Trust, for example, is using business intelligence tools to gain insights from previously isolated data stores. As a result, this United Kingdom-based mental health Trust is able to analyze the efficiency of service lines and provide a higher quality of care at a lower cost.

A data warehouse at Lincolnshire stores diverse data from numerous sources, including clinical, community, patient administration, and human resources systems. By extracting and cross-referencing data from the data warehouse, managers can identify trends early and make moves to ensure that care and services remain at a high level. When caseloads piled up in the "Older Adult" division, for instance, a manager was able to determine that the problem was a high level of clinician absenteeism. The manager realized that this issue meant the department would have a backlog the next month, thereby requiring support from other departments.

"We can compare demands for service versus the capacity of the organization, see where any bottlenecks are, and brainstorm ways to alleviate them," says Steve Lidbetter, Deputy Director of Performance and Information at Lincolnshire Partnership Foundation Trust.

The system populates scorecards and dashboards with data, giving clinicians and others clear gauges of how well they are meeting key requirements for both pre-care and post-care. For instance, managers can determine whether a patient who should be seen in two weeks has not been scheduled after week one, thereby allowing them to take swift action.

As a result of this improved cross-organization visibility, tough performance targets are now being met and exceeded. Lincolnshire psychiatrists, for instance, now provide a diagnosis for 95 percent of completed inpatient sessions.

"Our data warehouse has transformed this once complicated process into a seamless one by extracting data from two systems automatically," Lidbetter says.

## Better Coordination Improves Care

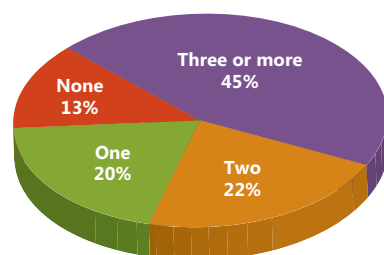
A lack of information coordination among agencies causes many to blindly pay providers and provide treatment without having either evidence of effective outcomes or the capability to better manage resources. These problems are especially evident as the population ages. The result is more chronic conditions, for which effective treatment depends on the coordination of care and services from different departments or even different healthcare organizations (see Figure 2, "Multiple Chronic Conditions," at left). Without coordinated information, it can be difficult to know whether services have been duplicated or the right care and services provided.

### Multiple Chronic Conditions

Organizations must deal with a growing population of people who have multiple chronic conditions. As a result, greater coordination between caregivers and organizations is needed.

*(Individuals aged 65-79 with chronic conditions.)*

#### Number of chronic conditions



Source: New England Healthcare Institute

Figure 2

Imagine an elderly person who is enrolled in four programs, each with its own case manager and separate records that are not shared. Without coordinated information, how can any of these managers determine how the citizen is doing as a whole? And how can the organization measure its operational efficiency?

"The Chronic Care Model is intended to link both medical and social services," CHQPR's Miller says. "For example, local Area Agencies on Aging [in the United States] already provide home support services for seniors. But they often don't connect to the healthcare system, such as checking whether seniors are taking their medicine. The doctors and nurses who plan and deliver patient care can do a much more effective job if they can coordinate with social services the patient is eligible for."

Kim R. Pemble, Executive Director at the Wisconsin Health Information Exchange, says that before the Exchange compiled data, he never appreciated how often people go to different facilities for healthcare, particularly emergency departments.

"We would always ask patients about their previous experiences, and they would do their best to tell us. But frankly, patients can't always remember or they choose not to remember," he says. "Having the past medical history listed in front of clinicians makes a world of difference in terms of integrating a view of patient history to [improve] decision-making for clinicians."

To improve efficiency, public health needs to simplify multiple health entities, eliminate duplicate entries of information, and facilitate access to critical care information. The interconnected services that result can greatly improve public health and people's lives.

In one Florida school system, for example, several hundred transferring students who had current vaccinations were routinely required to spend the first week of school sitting in the gym because they did not have their immunization paperwork. By coordinating the immunization data repositories from across the state, officials were able to access that data immediately, thereby allowing transferring students to start classes immediately.

Another example of interdepartmental coordination comes from Iowa's Department of Human Services (DHS), an umbrella agency responsible for providing services to children and the aged across the state. The organization's constituents may include the children of parents struggling with a drug addiction, a woman in need of prenatal healthcare, or an aging man struggling to balance the need for expensive prescription drugs while affording room and board.



*“By giving our staff a holistic picture of a person, we can do a better job of servicing them.”*

– Steve Mosen, CIO, Iowa Department of Human Services

DHS found that most people who need the agency’s services have multiple challenges that other departments need to address; for example, an individual looking for medical services from DHS may also be eligible for financial or food assistance. In the past, caseworkers had to access various incompatible systems with different interfaces to find information.

“Service workers do not otherwise use these systems, and it is easier for them to contact the eligibility workers rather than access the systems,” says Steve Mosen, CIO at the Iowa DHS.

To solve this challenge, DHS implemented an easy-to-use system—called At-A-Glance—that provides workers with a holistic view of each client. By having all of the agency’s case information aggregated in a central repository, caseworkers are able to comprehensively analyze and assess a client’s needs.

“By giving our staff a holistic picture of a person, we can do a better job of servicing them,” Mosen says.

## Seeing the Whole Patient Delivers Better Outcomes

In the United Kingdom, the West Lothian Council is saving £3 million a year by implementing technology that allows different agencies to work together more effectively. Previously, each of the agencies involved in delivering social care within the council’s area used its own software applications, which prevented them from knowing what the others were doing. A pediatrician investigating a possible victim of child abuse, for example, had no immediate access to the police or social work files that would help the investigation. Instead, the parties involved would have to spend time telephoning around to the other agencies to talk to the right individual.

The first application created by West Lothian—called eCare—brought together data from social work, health, and housing agencies. A second application—called C-me—integrated information from the council’s social work, education, and health systems to support children’s services. Employees at the agencies use the same applications as before, so lengthy retraining was avoided. Today, they can send messages securely to personnel at other agencies and receive notifications when information on a resident in their own system is updated in another system. C-me also allows users to see a chronology of significant events, referrals, and assessment history for each case.

“The time spent synchronizing facts and information in case conferences has been cut in half, enabling us to start by immediately discussing the case,” says Dr. Helen Hammond, a consultant pediatrician in West Lothian.

Coordinating services between agencies has improved the quality of home care, thereby allowing residents to stay in their own homes longer. The average stay in nursing care facilities has been reduced from three years to less than one year. And the total number of elderly in those facilities has remained constant, even while the aged population has risen by 10 percent.

Having ready access to this information improves the quality of caseworkers’ lives, too, because they can do their jobs in a more efficient and satisfying manner. At a Swedish social services agency, for example, the instances of sick leave among caseworkers dropped by 70 percent after they were provided with a case management system that coordinated information and remote access to it.

“A well-run organization can be measured in morale,” Palladium Group’s Dr. Friend says. “If people are happy, and aligned with one another in what they’re doing, they’ll be happy and committed, and the effects of that will run throughout the organization.”

## Sharing Information Improves Outcomes

Public health and social services organizations have found that cost-effective healthcare IT depends on using familiar tools that do not require a large amount of user training. This fact is especially true as organizations extend these tools to members of the general public, who increasingly demand more control over their health information but do not always have the digital skills to properly use that control (see Figure 3, "Patient Involvement Helps," at left).

The same is true for public health workers, who are not always tech-savvy, says Vernon Brown, CEO of Aspiranet, which provides services for California's children and families. The organization designed an easy-to-use portal that allows caseworkers to access information from a variety of agency systems. Soon after it was implemented, a real-world incident occurred that quickly revealed the benefits of the system.

### Patient Involvement Helps

When patients, citizens, and caregivers have access to health data, programs to help patients take greater control of their chronic conditions bring tangible results.



Figure 3

Source: Urban Institute

When a foster child under Aspiranet's care suddenly became seriously ill and was airlifted to the nearest children's hospital, emergency medical personnel and foster parents did not have the child's medical records readily available. An Aspiranet social worker was able to instantly access the records through the new system and, by being able to quickly share critical information with the team, the child's life was saved.

In combination with business intelligence and health portals, existing technology and other familiar tools can also save time by automating routine tasks and streamlining processes. Take the Tasmanian Department of Health and Human Services (DHHS) in Australia, which serves a population of 500,000 and has clinicians working in hospitals, rural health centers, and community clinics. To integrate information from diverse sources, DHHS constructed a portal. Because of this Web interface, busy clinicians can access crucial information, such as important policy and procedural information, and receive departmental

and professional updates on PCs or handheld devices. This access allows them to receive information at the point of care.

"DHHS operates within a complex healthcare environment," says Chris Showell, Manager of Information Systems at DHHS. "We need a solution that's easy to customize, deploy, and manage; is cost-effective and scalable; and offers the advanced information-sharing capabilities that our clinicians need to be effective."

Through the DHHS portal, clinicians can control and authorize the release of new material in their specialty areas, instantly sending it to everyone who needs to use it. The portal also makes it much easier to stay in touch with colleagues without time-consuming face-to-face meetings, thus improving clinician productivity. In addition, it is simpler to combine expertise and experience to produce effective information resources that protect patient safety.

"Our clinicians can now share information, collaborate on treatment guidelines, and control their distribution," according to Showell.

Bahrain's Ministry of Health also wanted to increase collaboration among its teams, which work from decentralized locations across the island country, and streamline its administrative processes. Its staff needed real-time access to critical information, such as availability of doctors or immunization statistics, to make informed decisions.

## Answering the Call

Public health organizations are responding to the need to improve efficiency and provide more effective healthcare and services with technology.

| Organization                              | Improvement  |
|---|--|
| Lincolnshire Partnership Foundation Trust | Psychiatrists provide a diagnosis for 95 percent of completed inpatient sessions.  |
| Veterans Health Administration            | The organization prescribes medication to patients with an accuracy of 99.993 percent.   |
| West Lothian Council                      | The council reduced costs by up to 80 percent by coordinating information among organizations.   |
| A Swedish Social Service Agency           | Caseworkers' sick leave dropped by 70 percent after they were given coordinated patient information and the ability to access it remotely. |

Source: Microsoft® customer case studies

Figure 4

"Only if we eliminate bureaucracy, streamline administration, and help staff share knowledge effectively can we achieve the high-quality service standards that the public expects from us," says Manal Ahmed Ali, Coordinator, Key Performance Measurement Service at the Bahrain Ministry of Health.

The solution was an intranet portal for internal communication and content management that serves more than 2,500 key users in the ministry's medical, administrative, and financial departments. The system has a single point of entry for all data, and documents are now managed from a single repository.

"We not only needed to improve the old intranet and standardize the Web environment, but we also wanted to build a versatile content management solution to improve internal communication throughout the ministry and unify operations. At the same time, it had to be easy to use so users did not feel burdened by technology," Ali says.

With streamlined workflows, the quality assurance department can now get policy approvals within days rather than months. Information workers can make better, faster decisions—with timely access to critical information—using the enterprise search tool in the corporate-level portal, and managers can use business intelligence tools to apply KPIs, which results in greater efficiency and better care.

## Conclusions and Recommendations

Public health and social services organizations are answering the call to improve efficiency and effectiveness from all their constituents—patients and citizens who use the services, caseworkers who provide them, and supervisors and administrators who oversee them (see Figure 4, "Answering the Call," at left).

Providing a higher level of care and service at a lower cost is best accomplished by following a three-pronged approach for delivering services—measure, monitor, and manage. By using this approach, health and social services organizations throughout the world are achieving significant improvements in efficiency by following these steps:

- 1. Coordinating information from various health and social services entities.** This step provides more visibility into duplicate services, facilitates access to critical care information, and improves the quality of care and services.
- 2. Combining and analyzing data from previously isolated systems.** This step enables organizations to set KPIs and accurately measure them in terms of processes, outcomes, and quality.
- 3. Sharing results with workers via dashboards and scorecards.** This step means workers can monitor how their individual efforts contribute to meeting broader organizational goals.
- 4. Providing caseworkers, supervisors, and administrators with tools to recognize trends.** This step enables them to manage programs and resources more effectively and to provide a higher quality of care and services at a lower cost.
- 5. Building Web portals and other remote technologies.** This step enables point-of-care access to crucial information and helps to speed processes and improve collaboration.

*“Only if we eliminate bureaucracy, streamline administration, and help staff share knowledge effectively can we achieve the high-quality service standards that the public expects from us.”*

– Manal Ahmed Ali,  
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Key Performance  
Measurement Service,  
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Organizations failing to take such an approach will be challenged in reaching the levels of efficiency that are required today in public health and social services. What’s more, those organizations that have followed the model of measure, monitor, and manage have found that it does not require a significant amount of time nor a huge expenditure of resources. Organizations are achieving immediate success with implementations that have a clear benefit and a short-term payoff, while also preparing for future expansion.

“We could easily integrate this technology with our IT infrastructure, and it was cost effective,” says Bahrain Ministry of Health’s Ali. Similarly, Mosena from the Iowa DSS says he was “amazed” at how little the equipment and software for his agency’s implementation cost.

Such quick and cost-effective efficiency gains through technology may help organizations move to a more proactive and sustainable health model, contain disease outbreaks more quickly, reduce healthcare expenditures, improve overall population health and wellness, improve compliance, and satisfy the growing citizen demand for greater input into and control over the services that are provided to them.

## For More Information

### **Microsoft for the Health Industry**

[www.microsoft.com/industry/healthcare](http://www.microsoft.com/industry/healthcare)

### **Microsoft Public Health and Social Services**

[www.microsoft.com/industry/healthcare/phss](http://www.microsoft.com/industry/healthcare/phss)

### **Lincolnshire Partnership Foundation Trust**

[http://www.microsoft.com/casestudies/Case\\_Study\\_Search\\_Results.aspx?Type=1&Keywords=Lincolnshire%20Partnership%20Foundation%20Trust](http://www.microsoft.com/casestudies/Case_Study_Search_Results.aspx?Type=1&Keywords=Lincolnshire%20Partnership%20Foundation%20Trust)

### **Iowa’s Department of Human Services**

[http://www.microsoft.com/casestudies/Case\\_Study\\_Detail.aspx?CaseStudyID=201161](http://www.microsoft.com/casestudies/Case_Study_Detail.aspx?CaseStudyID=201161)

### **West Lothian Council**

[http://www.microsoft.com/casestudies/Case\\_Study\\_Detail.aspx?CaseStudyID=4000003601](http://www.microsoft.com/casestudies/Case_Study_Detail.aspx?CaseStudyID=4000003601)

### **Aspiranet**

[http://www.microsoft.com/casestudies/Case\\_Study\\_Detail.aspx?casestudyid=4000003877](http://www.microsoft.com/casestudies/Case_Study_Detail.aspx?casestudyid=4000003877)

### **Tasmanian Department of Health and Human Services**

[http://www.microsoft.com/casestudies/Case\\_Study\\_Detail.aspx?casestudyid=4000000683](http://www.microsoft.com/casestudies/Case_Study_Detail.aspx?casestudyid=4000000683)

### **Ministry of Health, Bahrain**

[http://www.microsoft.com/casestudies/Case\\_Study\\_Detail.aspx?CaseStudyID=4000001388](http://www.microsoft.com/casestudies/Case_Study_Detail.aspx?CaseStudyID=4000001388)