

In the healthcare industry, fragmented care results in fragmented data. Healthcare organizations need clean, actionable data. A single longitudinal patient record that integrates financial, clinical, behavioral, social, and human services is required to manage high-risk patients.

Unlocking the Social Determinants of Health

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Introduction

The benefits of integrated social, human, behavioral, and clinical care are well documented in academic literature. The time is now for healthcare organizations to apply those learnings to the management of their highest-risk patients. It is only by taking a holistic approach to care that measurable progress can be made to improve clinical and financial outcomes. The key to success lies in the data — the requirement for clean longitudinal patient data is clear.

It is well documented and accepted that clinical care has only a small impact on an individual's health. The demands of at-risk contracting as well as the costs to the healthcare system of opioid addiction, poor housing, food insecurity, and other environmental factors demand a holistic approach to health management.

This IDC Technology Spotlight explores the creation of a comprehensive longitudinal care record that includes financial, clinical, behavioral, social, and human services data. To create clean, actionable data, healthcare organizations must overcome the complexity of a fragmented healthcare ecosystem and an external environment suffering from the same challenges.

Demand for Social Determinants of Health Data Grows Despite Complexity

A key element in the transformation to a value-based healthcare system is the holistic management of patients by integrating services across the spectrum of care. Episodic clinical care in isolation is not improving health or managing escalating expenses in any meaningful way; the integration of an individual's clinical, behavioral, social, and human insufficiencies is a necessity. Yet while many in the industry accept the benefits of integrated care, few have met the challenges of using integrated data to drive program design.

AT A GLANCE

WHAT'S IMPORTANT

When healthcare organizations speak about the challenges of improving the quality of care and managing costs, the number 1 barrier cited is the lack of clean, actionable data. Integrated data management can eliminate the fragmented data that is a barrier to quality and cost-effective healthcare.

KEY TAKEAWAYS

To successfully manage high-risk populations, healthcare organizations must be aware of the impact of behavioral, social, and human factors to clearly understand patient needs and determine the most appropriate care plan. This can occur only with actionable data that includes the social determinants of health.

The academic literature is full of studies¹ showing the positive impact on health outcomes from providing appropriate social and human services integrated with clinical care. Providing such services is the objective of many though few have delivered programs at scale that demonstrate sustainable improvements. Access to robust patient data to understand which services will deliver the best outcomes for individuals is key to long-term sustainable results.

Definitions

According to the World Health Organization, social determinants of health (SDOH) "are conditions in which people are born, grow, live, work, and age" that impact their health. Socioeconomic data is information that provides insight into those conditions so healthcare organizations can better understand how the combination influences health.

Trends Driving the Need for Social Determinants Data

While many individuals would benefit from an integrated care plan, the expense would be prohibitive due to sheer volume. The *Kaiser Permanente Social Needs in America Survey* found that one in four Americans had an unmet social need that impacted his or her health in the past year. The challenge is to identify and target the "right" individuals and get them into the "right" programs, both of which require data-driven insight.

Changing demographics and expansion of government-funded care are among the drivers of the disruptive change required if the industry is going to improve quality of care and manage expenses.

Specifically:

- » Over 25 million Americans age 60+ are economically insecure — living at or below 250% of the federal poverty level (FPL) (\$29,425 per year for a single person). These older adults struggle with rising housing and healthcare bills, inadequate nutrition, lack of access to transportation, diminished savings, and job loss. For older adults who are above the poverty level, one major adverse life event can change today's realities into tomorrow's troubles.²
- » About 80% of older adults have at least one chronic disease, and 68% have at least two. Chronic diseases place a significant burden on individuals as well as healthcare systems.³
- » Enrollment in Medicaid and Children's Health Insurance Program (CHIP) increased by 14.7 million among the 49 states reporting both baseline (July–September 2013) and April 2019 data, which represents a 26.1% increase. Currently 72.4 million individuals are enrolled in Medicaid or CHIP.⁴

¹ https://www.commonwealthfund.org/sites/default/files/2019-07/COMBINED_ROI_EVIDENCE_REVIEW_7.15.19.pdf

² <https://www.ncoa.org/news/resources-for-reporters/get-the-facts/economic-security-facts/>

³ <https://www.ncoa.org/healthy-aging/chronic-disease/>

⁴ <https://www.macpac.gov/subtopic/medicaid-enrollment-changes-following-the-aca/>

Progress Is Being Made

While still in the early stages, initiatives undertaken in states with Medicaid waivers are innovative and are showing signs of success. Over 30 states have Medicaid 1115 demonstration waivers that allow states greater flexibility in delivering services than is otherwise allowed under Medicaid rules. Many of the programs designed under the 1115 waiver are integrating care for selected populations. Some of the most innovative programs are emerging from the Medicaid waiver states.

For example, in 2017, the California Department of Health Care Services — recognizing that medical services address only part of a person's overall healthcare status — launched the Whole Person Care pilot program. It is designed to address not just the physical health but also the behavioral health and social insufficiencies of high-cost, high-need Medi-Cal enrollees, people who often have fallen through the cracks of the safety net. The program was created under California's Medicaid Section 1115 waiver, and it runs through December 31, 2020.

Using Whole Person Care funding, San Mateo County developed a multidisciplinary field-based care navigation team, Bridges to Wellness, made up of social workers, care navigators, and nurse practitioners to work with the highest utilizers of healthcare services in the county. The county reports that the team has seen impressive results, including a 30% decrease in emergency room visits between 2016 and 2017 among the top tier of highest utilizers. Additional results show that among those enrollees surveyed, 80% report improved self-management skills and quality of life.⁵

Program results such as Whole Person Care demonstrate the benefit of integrated care. The ability to scale programs and demonstrate sustainable results requires integrated data. Analytics such as those needed to identify patients, determine the most appropriate care plan, and evaluate program performance require that integrated data. Fragmentation of care and service delivery results in siloed data. Skills and technology are needed to transform that data into a unified, trusted resource.

The Data Dilemma

The data required for analytics, machine learning, and artificial intelligence (AI) algorithms is complex, decentralized, diverse, and difficult to gather. It may be structured, or unstructured, stored in various locations and in various media. It's hard to link data across health information systems to the same patient. Even the same data elements may be identified and stored differently in different systems. This lack of comprehensive, normalized, and clean data for the target population is holding back progress.

Data is available from public and private sources and includes population-level characteristics of a geography (e.g., census level) and patient-specific data that is collected by administering a screening questionnaire. Some data is available at no cost, and other data is available for a fee. In all cases, the data ingestion and curation issues are significant. Data sources are fragmented, there are no industry standards, and much of the data is self-reported — some even through paper forms. In addition, many legacy applications cannot easily accept and append data. This dirty data contributes to the limited success of population health management programs.

⁵ https://harbageconsulting.com/wp-content/uploads/2019/03/Harbage_WPC_MidPointPaper.pdf

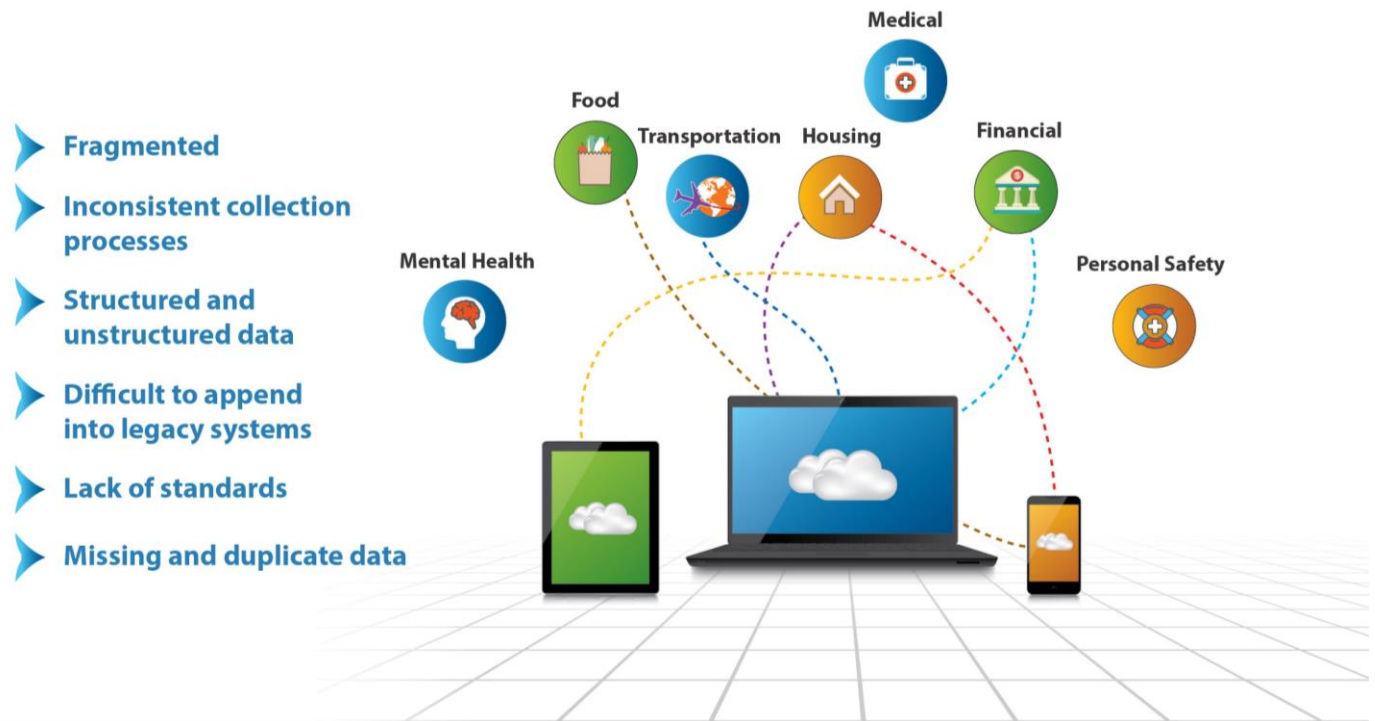
Access to clean, actionable data is key to making a good business decision, and creation of that data requires unique skills and technology. Capabilities required to create a unified care record include data integration, patient matching, aggregation, normalization, terminology and data enrichment, and deduplication. The result is a data set without duplicate records, formatting errors, incorrect information, or mismatched terminology.

Healthcare organizations have just begun to integrate financial and clinical healthcare data — the further integration of SDOH data presents even greater challenges. Healthcare organizations often collect and store social determinants data in silos (e.g., a hospital social worker may have SDOH data stored on his or her individual desktop), so organizations have to locate the data before they can begin the work of cleaning and integrating the data.

In a recent IDC survey, 36% of providers and 39% of payers indicated SDOH data is available in their analytic applications, but their responses regarding how they collect data, what data they collect, and how they use the data varied widely. According to anecdotal feedback from survey respondents, few organizations have mastered the data challenges, and as a result, the value of the data and resulting initiatives is limited.

Figure 1 documents the disparity of data and the challenges of fragmented, incomplete data that must be transformed into a single longitudinal patient record.

FIGURE 1: *The Data Dilemma*



Source: IDC, 2020

Benefits of Clean Data

High-quality SDOH data, combined with high-quality clinical and financial data, will power the analytics required to design and evaluate holistic healthcare and social care services. The delivery of integrated, clean data is replete with challenges but results in measurable benefits. The savings in labor costs alone are significant — data analysts and care managers spend hours trying to navigate fragmented, incomplete data, using up query cycles only to settle for "the best they can get." Data scientists spend 80–90% of their effort preparing data for machine learning and AI model building. Not only is there a loss of productivity but job satisfaction is likely to suffer as well. When care managers lack confidence in the data, downstream processes such as determining program priorities and communicating with patients or other ecosystem partners are opportunities for missteps.

Population health management suffers from a lack of information to support personalized program design. For example, all unstable diabetics might be enrolled in a single program. This generalized approach does not consider the unique characteristics of an individual that might be the key to program compliance and success. Access to clean data allows organizations to utilize more advanced analytics to more precisely profile patients and better understand the drivers of clinical risk. That precision will lead to more tailored programs with a greater likelihood of success.

The hesitancy of healthcare organizations to invest in integrated care programs is due in large part to the lack of an ROI model. Many well-intentioned social and human services programs provide valuable community services but are not necessarily designed to deliver a measurable return. For healthcare organizations to realize benefits from integrated care management programs, the expected value must be explicit and ongoing program performance measurement must occur. Healthcare organizations require clean data and computational expertise as well as greater rigor in program design and management.

Considering InterSystems

InterSystems, with headquarters in Cambridge, Massachusetts, has been in business for over 40 years, and its current clients include 1,900 hospitals in 25 countries. Today, more than 1 billion health records worldwide are managed using InterSystems technology. Its core capabilities include data management, application development, integration, and healthcare applications. InterSystems is recognized in the industry for its expertise and technology to master the heterogeneity and complexity of healthcare data and deliver clean, high-quality data to its clients.

InterSystems' healthcare clients include payers, providers, life sciences organizations, governments, technology innovators, software developers, and clinical laboratories. Interoperability in healthcare for InterSystems focuses on coordinated, collaborative care management; rapid, interoperable, healthcare solution development; and healthcare data acquisition and curation.

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Healthcare solutions are part of a product ecosystem based on InterSystems data management technology that includes the following:

- » The TrakCare electronic health record (EHR) system provides a unified patient record encompassing administrative, clinical, and financial information. As a unified system, TrakCare provides a single source of truth. TrakCare is deployed outside the United States.
- » HealthShare connects to clinical, financial, patient-generated, and social data sources to create a normalized, unified care record. It helps organizations analyze, share, and employ communitywide data across a wide range of use cases.
- » InterSystems IRIS is a data platform for developing and deploying applications. All the tools and capabilities are provided in a reliable, unified platform spanning data management, interoperability, transaction processing, and analytics.
- » Clean Data as a Solution is InterSystems' turnkey, hosted health data pipeline for analytics, dashboard, population health management, artificial intelligence, and machine learning applications. It connects to data sources; aggregates, deduplicates, and normalizes data; and delivers clean inputs.

All InterSystems healthcare products deliver native support for HL7 FHIR and every major global healthcare messaging standard, along with application programming interfaces (APIs).

Challenges

While there is little argument about the benefit of integrated care, the challenge is to deliver that care efficiently and effectively. Operationalizing what has been demonstrated through academic studies and pilot programs is hard, and without documented program ROI, healthcare organizations are hesitant to invest in integrated data. This may result in limited short-term demand for InterSystems and others in the market while integrated programs mature.

Conclusion

The healthcare market recognizes the implicit value of integrating clinical, behavioral, social, and human services. The road to that integrated model is less clear. While integrated programs show positive results, many programs are not scalable due to lack of integrated data. SDOH data is fragmented, and the lack of standards makes it challenging for healthcare organizations to use the data. Integrating SDOH data requires specialized skills and technology. Healthcare organizations will be unable to build successful long-term integrated programs without clean and actionable data.

About the Analyst



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Cynthia Burghard is a research director with IDC Health Insights where she is responsible for the value-based healthcare practice. A key focus of her research includes the use of cognitive/AI technologies to advance digital transformation in healthcare. Areas of research include analytics, population health workflow, and proactive patient engagement including patient personal assistants.

MESSAGE FROM THE SPONSOR

Healthy Data is data that has been unified, cleaned, and is ready for action. InterSystems makes healthy data available, usable, governable, and actionable to organizations and individuals throughout the healthcare ecosystem via multiple platforms. With 1,700 employees worldwide, InterSystems puts unified, clean, healthy data to work for you. Learn more at www.intersystems.com

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