

The Promise of Interoperability



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Despite technological advancements in health care documentation and the proliferation of electronic health records, health information and health data remain disparate. Patients and health care teams benefit from access to comprehensive patient records to make informed health care decisions. Significant governmental policy and investments have been made to promote interoperability of systems that connect health information with the ultimate intent of developing a longitudinal patient record. In this article, we discuss how health data, interoperability, and related systems are influenced by federal policy. The intent is to expand occupational therapy practitioners' understanding of the promise of interoperability and the role the occupational therapy profession can play in advancing the infrastructure needed to optimize health care delivery.

Data are increasingly becoming part of the language of health care. Occupational therapy practitioners know the importance of quality documentation and data to ensure that the specifics of an evaluation or an intervention session are captured. The collection of these data is vital to the care and treatment of the individual client. However, this information is also part of a larger conversation about the value of health care data across the entire health care system. Occupational therapy practitioners use data on patient treatment for many reasons in addition to patient care. Among these are quality-reporting programs and the development of outcome measures for larger patient populations. The hope and promise of health data are that practitioners can use these data to define and implement evidence-based practices for occupational therapy and the broader health care field.

The analysis of large data sets is a useful method to identify trends in areas that support occupational therapy treatment. [Rogers et al. \(2017\)](#) analyzed Medicare claims data and found that increased spending on occupational therapy services was associated with lower readmission rates. To continue to demonstrate the efficacy and quality of occupational therapy, occupational therapy practitioners need to embrace data that show the outcomes of therapy ([Leland et al., 2015](#)). As quality-reporting programs continue to expand and payment models evolve, the occupational therapy profession needs to use data collected during treatment to inform decision making at the national level ([Pritchard et al., 2019](#)). In addition, many data collection systems are in play, and working to ensure data collection is streamlined and that data are shared across systems is of vital importance.

All of these factors have a direct impact on occupational therapy reimbursement and practice standards. Occupational therapy practitioners should advocate in support of data-driven decision making to improve health care from the patient level to the population level. The systems currently in place contain barriers to health information

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access (Powell & Alexander, 2019). Challenging the current infrastructure is important to ensure that the profession continues to play a vital and important role in health care. In this article, we share an overview of how policy and the opportunities of interoperability affect the occupational therapy profession.

What Is Interoperability, and Why Is It Important?

According to the Healthcare Information and Management Systems Society (HIMSS; n.d.), *interoperability* is defined as

the ability of different information systems, devices and applications (systems) to access, exchange, integrate and cooperatively use data in a coordinated manner, within and across organizational, regional and national boundaries, to provide timely and seamless portability of information and optimize the health of individuals and populations globally. (para. 2)

Health care delivery is not a closed system; patient health information is held in multiple systems and is thus not easy to access. Interoperability attempts to remedy this issue, which affects the clinical decision making of both patients and health care teams (Azarm et al., 2017). Despite the incorporation of electronic documentation in electronic health records (EHRs), systems remain disparate (Perlin, 2016). It is common for occupational therapy practitioners to have access to only certain patient information as a result of the structure of EHR systems and the issues surrounding interoperability. In addition, this patient information relates only to patient services within the singular health system, meaning that a significant amount of information about the patient is not available to the practitioner. In today's current health care delivery system, clinicians do not have access to valuable patient information and must develop care plans without it. Even though the data are in a system, without interoperability, patients are often responsible for remembering and sharing their patient experiences.

Interoperability addresses the issue of keeping patient information exclusive to one organization. Health care organizations that embrace interoperability ensure cost savings and care efficiency that have a direct impact on occupational therapy (Iroju et al., 2013). For example, an interoperable system would reduce replication of services such as imaging by allowing results to be transferred instead of repeated (Walker et al., 2005). These images and information, which are incredibly valuable in determining intervention planning, would be available to occupational therapy practitioners. In addition, interoperable systems improve communication, reducing health care errors and enhancing care coordination (Walker et al., 2005). When electronic systems are interoperable and information from one system is shared with another, valuable time can be saved—unnecessary phone calls or the need to track down patient information can be avoided (Gordon & Catalini, 2018), and discharge planning and care transitions can be improved.

Occupational therapy practitioners would greatly benefit from an interoperable health system. The occupational therapy profession is unique and promotes patient autonomy. With the focus on independence and quality of life, having the right health information at the right time to make informed decisions enhances an occupational therapy practitioner's ability to ensure that discharge plans and care decisions meet patient needs and desires. Occupational therapy is a client-focused profession, and health information ensures that clinicians make the best decisions for each client to support clients and their families. Both patients and practitioners are empowered when health records are more easily accessible. When care plans are easily shared, care can be consistent and continued more effectively. In addition, access to a wide variety of health information can help occupational therapy practitioners design better and more informed intervention plans. Practitioners can support these plans when patients transition from one health care environment to another, which enhances the patient's experience and quality of life. An interoperable system would also help occupational therapy practitioners reduce waste and repeated services, optimizing care to ensure improved patient outcomes.

The benefits of interoperability are clear, but many challenges to building it into the health care infrastructure exist. Although policymakers in the United States are engaged in promoting interoperability, occupational therapy practitioners can advocate for advancing interoperability.

History of Policy for Interoperability

In the 1990s, efforts began to develop health information networks to support the exchange of health information as records moved from paper to electronic documentation. In 1999, the landmark publication by the Institute of Medicine, *To Err Is Human* (Kohn et al., 2000), acknowledged that too many health care errors plagued the system. That same year, the Agency for Healthcare Research and Quality (AHRQ) provided funding to begin to build health information exchanges (HIEs). The intent of HIEs is to build structures that promote the exchange of appropriate and protected health information to help clinical teams and patients make informed health care decisions.

HIEs are defined by HIMSS as “organizations within the United States that provide health information exchange technology and services at a state, regional or national level and often work directly with communities to promote secure sharing of health data” (HIMSS, n.d., para. 5). HIEs include health information from EHRs, and they can act as an important resource by connecting disparate data through patient matching to track health outcomes across health care delivery systems. They are intended to support health care teams to become more informed about patient access and services no matter when and where health care is accessed. HIEs are an invaluable tool in reducing the delivery of unnecessary services such as diagnostic imaging and laboratory tests (Eftekhari et al., 2017). They also support event notifications—“real-time, electronic, automatic alerts to providers of their patients’ health care encounters at other facilities” (Vest & Ancker, 2017, p. 39). These notifications help health care teams be aware of issues with patients or when they receive certain types of care such as a hospitalization. In addition, HIE data can support risk stratification programs to support earlier health care delivery, reduce duplication of services, and develop alerts to track and support patient care delivery. Occupational therapy practitioners and patients would directly benefit from all these uses of the HIE.

In 2004, an executive order established the Office of the National Coordinator for Health Information Technology, which was then legislatively mandated in the 2009 *Health Information Technology for Economic and Clinical Health (HITECH) Act* (Pub. L. 111-5). The HITECH Act provided funding incentives to support the move to EHRs, expanded the *Health Insurance Portability and Accountability Act of 1996* (HIPAA; Pub. L. 204-191) to electronic protected health information, and supported the connection of HIEs (Burde, 2011). The HITECH Act established meaningful use of EHRs, indicating that EHRs must be leveraged in ways that improve health care quality (Colicchio et al., 2019). *Meaningful use* involves five priorities: “1. Improve quality, safety, efficiency, and reduce health disparities; 2. engage patients and families in their health; 3. improve care coordination; 4. improve population and public health, and 5. ensure adequate privacy and security protection for personal health information” (Centers for Disease Control and Prevention, 2020, para. 2). In 2018, the focus moved away from incentivizing the adoption of EHRs toward a focus on interoperability and efforts to support increased patient access to health information.

The *Patient Protection and Affordable Care Act* (2010; Pub. L. 111-148) provided incentives for HIEs as part of the movement from volume to value in health care reimbursement (Powell & Alexander, 2019). In 2016, the *21st Century Cures Act* (Pub. L. 114-255) became law and established rules around information blocking, which occurs “when providers or developers knowingly engage in practices likely to interfere with exchange or use of electronic health information, leaving interoperability unprotected” (Powell & Alexander, 2019, para. 3). Because the health technology field includes many players, information blocking is often driven by multiple factors, including concerns about data sharing and privacy and diversity in technical standards (Powell & Alexander, 2019). All of these policies have supported the establishment of HIEs, which are often state based, but regional HIEs are starting to emerge, which is important because patients often cross state lines to access health care.

Although multiple states have HIEs, not all have been successful and sustainable. The potential of and opportunity for interoperability and HIEs are expansive. Promotion of interstate data sharing is a critical next step toward the promise of interoperability (LeRouge et al., 2016). However, challenges to overcome in these efforts include diversity of data sharing, privacy laws, consent policy, and even state regulations (Zeng et al., 2020). In addition, the cost to enhance and maintain is an ongoing challenge that can be remedied through fees and grant funding (LeRouge et al., 2016). Although significant federal investment has already occurred, continued investment is needed to make the vision of interoperability a reality.

Future Opportunities of the Health Information Exchange

Recently, several calls to action have been published that recognize the power of HIEs as an opportunity to support public and population health and as a utility for informed and rigorous research (Madhavan et al., 2020; Whicher et al., 2020). The future of the HIE is as a population health utility that can meet the elements of the Quadruple Aim (cost of care, patient experience, population health, and care of the clinician; Bodenheimer & Sinsky, 2014). This utility approach uses health data to improve health care delivery, support policy development and implementation that enhance population health, develop tools to improve patients' access to their own health information, and partner with researchers to explore the impact of health issues on a large scale. HIEs can be valuable partners with health systems and academic institutions in promoting value, research, and economic impact.

Promise of Interoperability

As part of interoperability, many elements within the health care system must be connected. Multiple tools and systems need to be considered in this process. These include EHRs, prescription drug monitoring programs, clinical data registries, and quality initiatives.

Electronic Health Records

As defined by the Office of the National Coordinator for Health Information Technology (2019) "Health IT Playbook," an EHR is "software that's used to securely document, store, retrieve, share, and analyze information about individual patient care" (para. 1). EHRs are not static entities: They require thoughtful input into the design, maintenance, and output of data. In addition, users of EHRs, including providers, need training to ensure understanding of workflow and data elements because data quality depends on the attention to detail of the people entering the data into the systems. Both technical and clinical teams must understand and be a part of this process.

Prescription Drug Monitoring Programs

Although prescription drug monitoring programs (PDMPs) are for prescribers and pharmacists, occupational therapy practitioners should also be aware of their use. PDMPs are "statewide databases that gather information from pharmacies on dispensed prescriptions" (Bao et al., 2016, p. 1045), with some focused on controlled substances and others focused on all dispensed medications. Because PDMPs are often statewide, they are often regulated by state law, which influences their utility across the country. PDMPs were developed and implemented in reaction to the opioid crisis and have demonstrated a reduction in opioid dispensing (Moyo et al., 2017). Given occupational therapy's role in medication management, it is important to be aware of the role of PDMPs in the health care system.

Clinical Data Registries

According to the AHRQ's (2014) *Registries for Evaluating Patient Outcomes: A User's Guide*,

a patient registry is an organized system that uses observational study methods to collect uniform data (clinical and other) to evaluate specified outcomes for a population defined by a particular disease, condition, or exposure, and that serves one or more predetermined scientific, clinical, or policy purposes. (p. 1)

In other words, a *registry* is a database of patient information related to specific attributes. The data in registries can be used to look for similarities in patient attributes and trends in effective treatments and to work to improve the health of a specific population.

The American Occupational Therapy Association (AOTA) has worked with the American Board of Family Medicine (ABFM) to allow occupational therapy practitioners reporting as part of the Merit-based Incentive Program for Medicare Part B to use the ABFM PRIME Registry. Although this program is in its early stages, more opportunities to aggregate reporting of data are likely to occur in the coming years. These are opportunities to ensure that the right patient data are being collected.

Quality Initiatives

Health care data are also vitally important in the achievement of health care quality initiatives. Having information about a patient across multiple treatment environments allows therapists to plan occupational therapy interventions as well as show the benefit and value of these interventions. Using data to inform care at both the client and the population levels allows care teams to prioritize quality improvement and focus on areas that will have the most impact.

How Health Data Affect Occupational Therapy Practice

Patient data recorded by therapists in these systems are of vital importance to care teams and regulatory agencies. Data from these systems can be used for reporting outcomes and showing patient improvement. By focusing on data collection related to the unique contributions of occupational therapy, practitioners can show their unique and whole-person contributions to patient outcomes and health care cost savings. These data may include activities of daily living, functional cognition, safety, and quality of life.

Payment models continue to evolve as well, and these changes underscore the need to use data to show quality outcomes as a part of occupational therapy treatment. Both the skilled nursing facility Patient Driven Payment Model, implemented on October 1, 2019, and the Home Health Patient-Driven Groupings Model ([Centers for Medicare & Medicaid Services, 2020a, 2020b](#)), implemented on January 1, 2020, use the case-mix payment model to drive the move from volume to value payment. Facilities are incentivized to provide the most cost-effective treatments to clients that result in positive care outcomes. By using data to demonstrate occupational therapy's contribution to patient care and outcomes, the profession can position itself as a useful and sought-after treatment modality. Without data to demonstrate outcomes, the future may look much different.

Occupational therapy practitioners must work with EHRs in most settings. As reimbursement moves from volume to value, the need to demonstrate the importance of occupational therapy is critically important ([Miller, 2019](#)). To define and clarify the value of occupational therapy, information from EHRs and HIEs can be relevant to support, establish, and maintain services. In addition, this information can be used for program development and movement into practice areas such as primary care ([AOTA, 2020](#)). Occupational therapy practitioners need to understand how data are collected and reviewed to help support data-driven decisions about patient care.

Occupational therapy practitioners would benefit from understanding the broader health care system and staying informed when policy changes such as the HITECH Act take place, envisioning how they affect the profession at the micro, meso, and macro levels. In addition, recognizing the need for people with expertise in informatics or data science to help support data extraction and analysis and improve clinical workflows in EHR systems is important. Contacting a statewide HIE to explore training opportunities and use in occupational therapy is an important advocacy effort practitioners can undertake.

In addition, data science and medical informatics professionals benefit from understanding occupational therapy. Working together to determine relevant and important metrics for quality and decision making is important to ensure the profession and patients benefit. Advocacy comes in many forms, and advocating for occupational therapy by educating those in the health care sphere focused on data and health information about the profession can only benefit the profession and the patients who receive services.

Conclusion

As data management and interoperability continue to become a larger part of health care, occupational therapy will need to continue to advance in this area. With changes to payment models and quality-reporting programs, occupational therapy needs to position itself to show the value of occupational therapy interventions. AOTA continues to support practitioners in evidence-based practice (EBP) and quality reporting. AOTA is a member of the National Quality Forum and continues to contribute to the national discussion regarding measure development and outcomes.

Occupational therapy practitioners can also lead the profession in this endeavor by

- keeping abreast of changes in policy at the national level and their effect on occupational therapy treatment and payment;
- becoming involved in discussions regarding data collection, reporting, and interoperability;
- using EBP in providing treatment;
- collecting data regarding patient outcomes within EHRs and using these data in the clinical decision-making process, as discussed in the *Occupational Therapy Practice Framework: Domain and Process* (4th ed.; AOTA, 2020);
- educating stakeholders (e.g., payers, regulatory agencies) regarding occupational therapy's contributions to patient outcomes; and
- seeking out training in how to use important tools such as HIEs and registries.

Focusing on interoperability and the effective use of data across care environments will be of primary importance moving forward. Through the continued collection of data and demonstration of outcomes related to treatment, occupational therapy can well position itself for the ongoing changes in health care. ■

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