What is interoperability?

The Institute of Electrical and Electronics Engineers defines interoperability as the "ability of a system or a product to work with other systems or products without special effort on the part of the customer." For hospitals and health systems interoperability means applying this concept to the sharing of information in electronic health records (EHRs) and other health information through a fluid process that gives multiple providers in multiple locations actionable information to support safe and quality care and to engage patients in their own care. Interoperability also enables providers to protect the public health by reporting a wide variety of data to county, state and federal authorities.
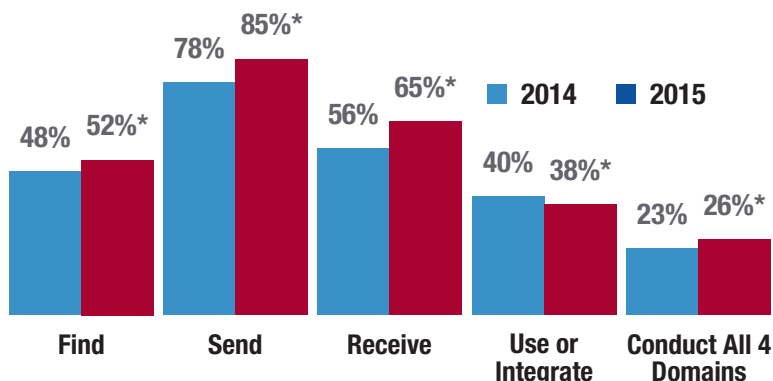
Challenges facing hospitals & health systems

Interoperability requires linking information systems within the hospital, the hospital system and other entities, such as physicians' offices, state and local public health agencies, health information exchanges and the Centers for Disease Control and Prevention (CDC). Unfortunately, there is no super-highway to do so and, as a result, hospitals must employ a wide variety of workarounds, resulting in incomplete information sharing and significant costs.

Most hospitals can send and receive data via an EHR using a Web portal, or through a health information exchange (HIE) – a system that allows clinical information to be shared across multiple providers in a region or state. However, substantial barriers to effective information sharing and use exist. As the chart at right indicates, only 40 percent of hospitals can use the information they receive, meaning that patient records are integrated into the hospital's EHR without the need for manual data entry. Only about a quarter of all hospitals can find, send, receive and use electronic information.

The financial cost and impact on care resulting from these obstacles has placed interoperability at the forefront of challenges facing hospitals and health systems today. However, a new law, the 21st Century Cures Act, sets forth requirements for

The percent of hospitals electronically sending, receiving, and finding key clinical information grew significantly between 2014 and 2015

	2014	2015
Find	48%	52%*
Send	78%	85%*
Receive	56%	65%*
Use or Integrate	40%	38%*
Conduct All 4 Domains	23%	26%*

NOTE: See the Appendix Table for more definitions of find, send, receive and use/integrate. *Significantly different from previous year (p < 0.05). SOURCE: ONC/American Hospital Association (AHA), AHA Annual Survey Information Technology Supplement

Hospitals must report data to a multitude of quality measurement agencies and organizations

sharing health information that will soon become a high priority for hospitals, health systems and their boards.

Addressing the challenges

Signed into law in 2016, the 21st Century Cures Act has initiated a coordinated effort on the part of the federal government to improve interoperability in health care. The wide-ranging law, designed to advance the development of medical treatments and cures, set forward steps for a trusted exchange framework and common agreement for sharing health information. The Office of the National Coordinator for Health IT has been charged with convening stakeholders to design an information exchange framework and then work with the National Institute of Standards and Technology for technical assistance on its implementation. With further guidance on implementation expected in 2018, hospital executives and boards will play a critical role in ensuring this effort is successful.

The chart to the right was created by the AHA's Interoperability Advisory group to highlight the options for hospitals, health systems and stakeholders across both the private and public sectors to address issues related to health information systems.

Actions for Health Care Providers & Boards

In addition to the steps identified in the chart to the right, health care providers and boards can begin now to prepare for enhanced interoperability – in support of effective, efficient health information sharing and use. Health care executives, clinical leaders and boards should:

- Keep abreast of emerging requirements. Boards can request periodic updates for the full board from the organization's Chief Information Officer and/or Compliance Officer or assign monitoring of these requirements and their potential impact on the organization to a board committee, such as the Audit and Compliance Committee or Finance Committee.

- Insist on working with IT vendors committed to efficient and affordable information sharing.

- Work with federal, state and local regulators to ensure development of common standards, certification and testing that support effective health information sharing for care delivery, patient engagement and data reporting.

Private Sector Actions	Public Sector Actions

Hospitals, health systems and other providers must identify their priorities and make it clear to vendors that they want efficient and affordable information sharing. Providers must:

- Set an expectation that vendors adhere to standards.
- Identify the highest priority information sharing activities (or "use cases") they want their health IT systems to support.
- Contribute their requirements for testing as the endusers of health IT systems.
- Invest in standardizing care processes and use of systems.
- Actively identify and share lessons learned and best practices.

Vendors must take actions to enhance interoperability in support of the priorities set by hospitals, health systems and other providers. They must align their business case with the needs of their customers so that information can be shared efficiently and effectively, without repeated and expensive "tolls" for creating interfaces and completing transactions. Vendors must:

- Commit to consistent use of standards and implementation specifications, participate in testing, and provide documentation on adherence to standards.
- Share expertise during development of standards, implementation specifications, and use cases.
- Be more transparent about technical solutions.
- Align their business case with the needs of their customers.

To be viable, health information exchanges (HIEs) must be able to share data across their organizations to create a network of networks.

- HIEs have begun to coordinate, but the work is not yet complete.

A multi-stakeholder group would foster further collaboration.

- Given the many actors involved in supporting health information exchange, a multi-stakeholder group may be needed to drive progress on interoperability.

The federal government must continue to support advances in interoperability, but with a laser tight focus on standards, certification, and testing. This focused approach will ensure that EHRs and other health IT tools deploy standards to efficiently share information to support care, patient engagement and new models of care. The federal government must:

- Focus interoperability efforts on accelerating exchange of data currently collected.
- Improve certification, based on more robust testing.
- Create and support robust testing tools to ensure systems conform to standards that support interoperability.
- Increase public reporting on how vendors support interoperability and information sharing.
- Lead selection of standards, including continued development and maturation of needed standards.
- Actively support adoption of standards by providers.
- Address patient identification and matching.
- Rely on existing polices and the incentives of new models of care to encourage information sharing by providers.
- Adopt a reasonable timeline for change.

State governments should be discouraged from establishing unique requirements that increase variation in standards and policies because variability diminishes the ability to share information across state lines.