



GE Healthcare

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HIT Policy Committee
Information Exchange Workgroup
Provider Directory Task Force
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Dear HIT Policy Committee and Directory Workgroup Members:

Thank you for this opportunity to testify on behalf of GE Healthcare.

GE Healthcare is a leading vendor of healthcare information technology, providing a wide range of solutions to support medical practices, hospitals, integrated delivery networks, health information organizations, public health organizations, and payer groups. We provide products supporting electronic medical records, health information exchange, quality improvement, clinical decision support, revenue cycle management and claims processing, in addition to equipment and materials for diagnostics and monitoring.

GE has been a strong supporter of the HITECH Act and the work of the HIT Policy and Standards Committees. We believe that your work, as utilized by ONC and CMS, can produce a great leap forward in health care quality and efficiency.

I'm especially pleased to be testifying with such distinguished colleagues.

Use Cases for Provider Directories

Our products principally use internal rather than external provider directories. The most common use case for internal provider directories is to facilitate communication between healthcare providers where there is an existing business relationship and communications infrastructure. These internal directories are used, for example, in laboratory order and results submission, or claims submission routing and remission. Creating such an internal directory entry is a very small part of establishing the business relationship and communication infrastructure.

Several of our products do use external provider directories, for example, to support e-Prescribing and Referrals. These two use cases address communications where existing business relationships need not exist between the sender and the receiver of the communication. Where business relationships between providers do not already exist; strong policies do exist as part of those providers' relationships with the messaging provider or prescription hub, and it is those policies that support the use of these directories. These policies indicate not only sender and receiver responsibilities, but also the detailed requirements for the communication expected and how to use the standards that enable the communication.

As more communications connections become ad hoc, (e.g., in the Direct project of the National Health Information Network), there will be an increased need for external provider directories. In the Direct use case, there is a need to locate a provider communications end-point address, and to obtain a provider certificate to verify communications.

Other use cases have been proposed for results routing, or ordering of diagnostics tests. These latter two cases are addressed in our products today with internal directories. In the case of results routing and laboratory test ordering, there are regulatory requirements (e.g., the Clinical Laboratory Improvement Act) regarding to whom results may be sent, and consequent verification of interfaces that require connectivity to be established using a pre-existing infrastructure.

Two Different Types of Directories

In our use of external directories, we would distinguish between two types of directory; that supporting provider discovery (Yellow Pages) and that supporting service discovery (so-called routing directories). Yellow page directories allow a user to locate a specific provider, based on geographic location, specialty, eligibility, plan participation, or even office hours. The principal use of service directories is to facilitate not location of providers, but rather, connection to end-points to support electronic communication. This is a related, but separate function from that of yellow page directories. The two should work together, but the use of one by a system does not necessarily mandate the need for the other.

Yellow Page Directories

Yellow Page directories principally serve a typical, widely experienced human need. While they may be used to locate providers to which a communication is directed, they are not typically used to initiate computer-to-computer communications (note that e-mail is still principally human to human communication). There are numerous sources for Yellow Page directories. Health insurers, Integrated Delivery Networks and Group Practices, regional networks, specialty societies, regional public health agencies, and even the federal government provide various forms of yellow page directories. Most of these are available online and have relatively easy to use search features.

However, each of these yellow page directories also has different business purposes, requirements and use cases. Provider directories from insurers often link the provider back to one or more specific plans, those from an IDN or group practice only include members and/or employees of that organization, those for a specialty society are limited to society members, et cetera. The trust framework and update model for yellow page directories may be different based on the source and purpose of these directories.

Service Discovery Directories

What have previously been called routing directories we would call a service discovery directory. "Routing" is a specific network function that is one of many services that these directories can enable.

Service discovery directories can provide the following capabilities:

- A) Authentication
- B) Certificate Discovery
 - a. Certificate for encryption of Direct Communications
 - b. Certificates used for electronic prescribing
- C) Role Discovery and Verification
 - a. Discovery of provider roles and licensure
 - b. Verification of roles with respect to a specific patient
- D) End-Point Discovery (the "Routing" function)
 - a. Service end-points for Direct Communications

- b. Results reporting services (Lab/Diagnostic Results)
- c. Electronic Referrals

The trust and maintenance frameworks for these directories need to address several risks that are not present in existing yellow page directories. Some of the risks associated with computer to computer communications include unnecessary exposure of protected health information, impersonation of a healthcare provider for illicit reasons, improper use of communication addresses (e.g., SPAM), exposure of communications end-points to attacks, et cetera. There are a number of means to mitigate these risks, including user authentication for directories used for service discovery and stronger access controls.

The partitioning of directories into these two types, service discovery and yellow pages, facilitates the development of separate uses cases, requirements and application of appropriate risk management strategies for each.

Existing Standards

The use of yellow page directories to locate healthcare providers is long established practice, with relatively little standardization across the industry. Healthcare directories have been developed by the federal government in association with national provider identifier initiatives, by payers and payer related organizations, specialty societies, public health organizations, regional information organizations, et cetera. Although there may be limitations to these directories, they seem to serve the function for which they are designed, that being to locate providers of a certain type. Expansion of these directories to serve a broader use case needs careful evaluation, and may not be the most appropriate technology to service other requirements. Another area to explore with yellow page directories are the minimum data sets and linking elements that would enable aggregation of their contents across multiple yellow page directory services.

The use of service discovery directories is receiving more attention in healthcare, with a longer history elsewhere in information technology. There are a variety of existing standards and technologies already used to support this type of directory. The LDAP standard, for example, provides capabilities for federated directories that support authentication, discovery of certificates, end-points, demographics and organizational relationships. X.509 certificates can be used to identify providers and indicate licensure and adherence to specific policies. The Directory Service Markup Language (DSML) provides an XML representation of LDAP content suitable for exchange using existing protocols. Finally, Integrating the Healthcare Enterprise has developed an implementation guide (which they call a profile) known as Healthcare Provider Directories (HPD). The HPD implementation guide uses several of these standards and is designed to support use cases for both query and maintenance of directories.

Conclusions

Given limited resources, any approach to provider directories should begin with specific use cases before it progresses to data sets, standards or technology. These use cases should be based on not just an identified need, but also on the expected return on investment. Creation or expansion of directories to support a semi-permanent communications infrastructure is not nearly as valuable as an approach that supports a rapidly changing, ad-hoc network of providers.

The need to develop and apply trust frameworks to directories is not unique to healthcare. We refer the Workgroup to existing work on the [National strategy for Trusted Identities in Cyberspace](http://www.dhs.gov/xlibrary/assets/ns_tic.pdf) (http://www.dhs.gov/xlibrary/assets/ns_tic.pdf), the [Kantara Initiative](http://kantarainitiative.org/) (<http://kantarainitiative.org/>), and the [Federal Public Key Infrastructure](http://www.idmanagement.gov/drilldown.cfm?action=fpki) (<http://www.idmanagement.gov/drilldown.cfm?action=fpki>).

Similarly, we refer the Workgroup to existing standards, technologies and functionality that are available on the market now and that have been mapped to the requirements of well-established use cases, many of which may align well to the HIT/HIE-specific use cases that you are uncovering.

Thank you for the work that you are doing and for the opportunity to testify.

A handwritten signature in black ink that reads "Keith W. Boone". The signature is written in a cursive style with a large initial 'K' and a long, sweeping underline.

Keith W. Boone
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GE Healthcare