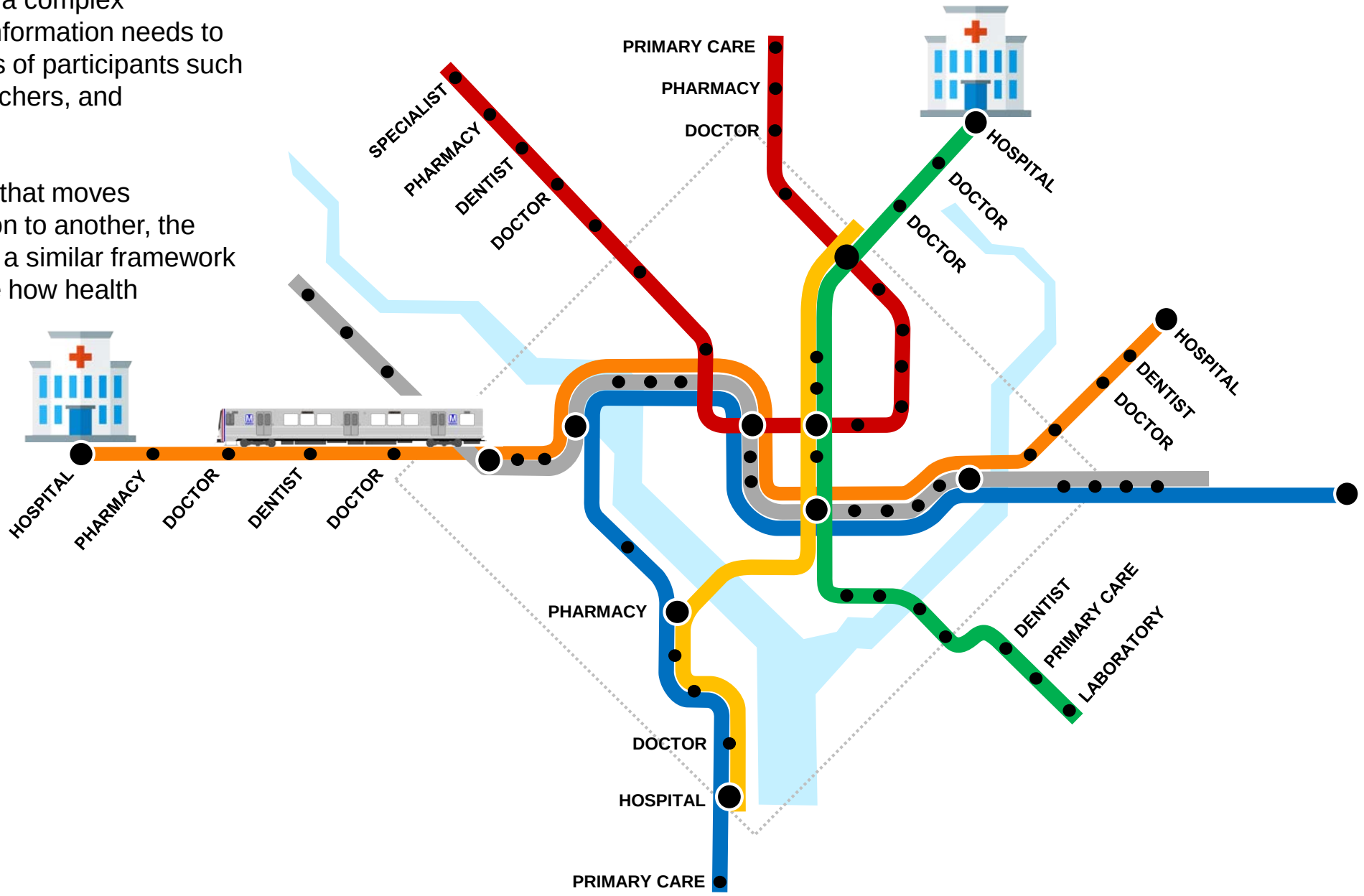
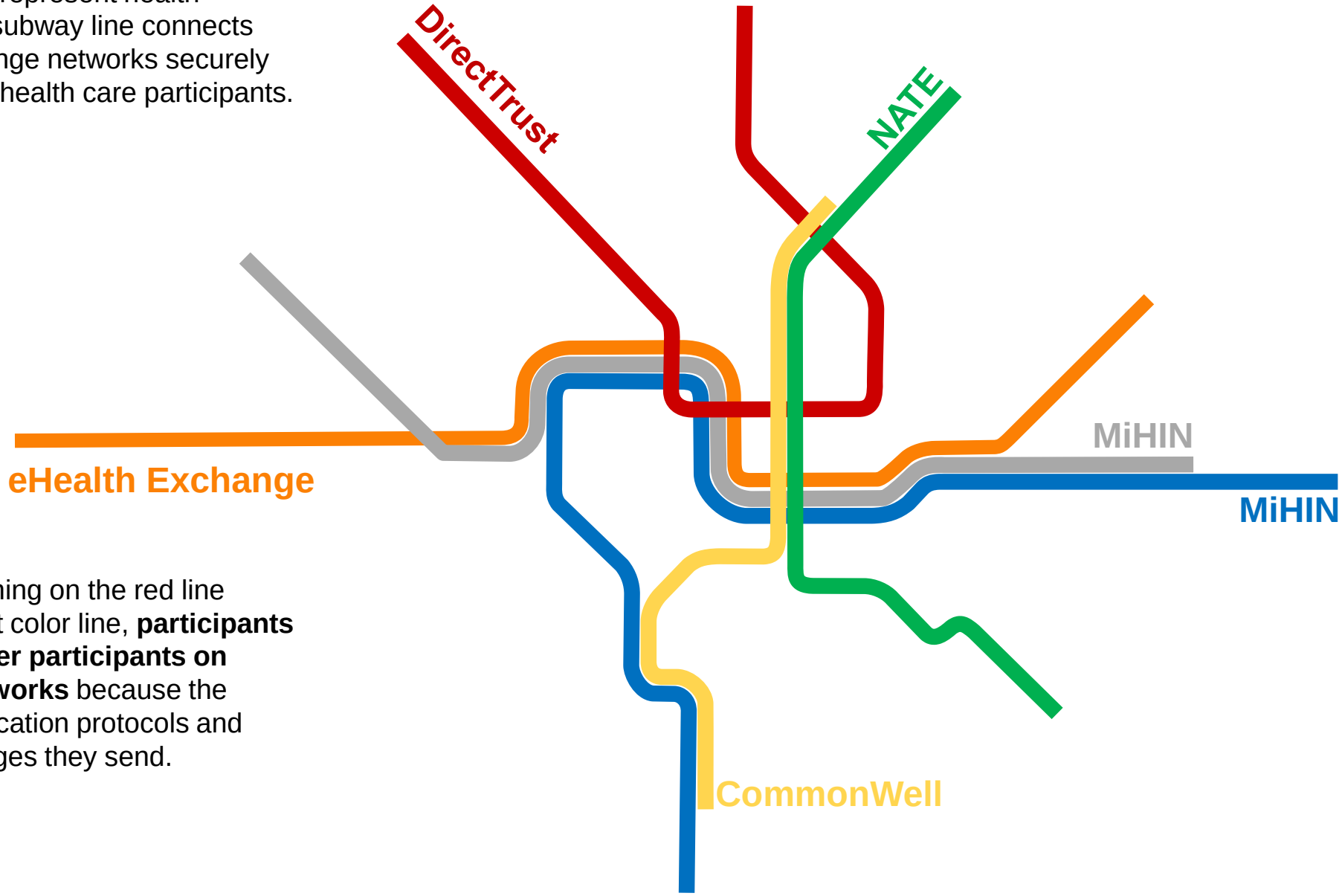
The healthcare IT system is a complex environment where health information needs to be shared among thousands of participants such as providers, payers, researchers, and beneficiaries.

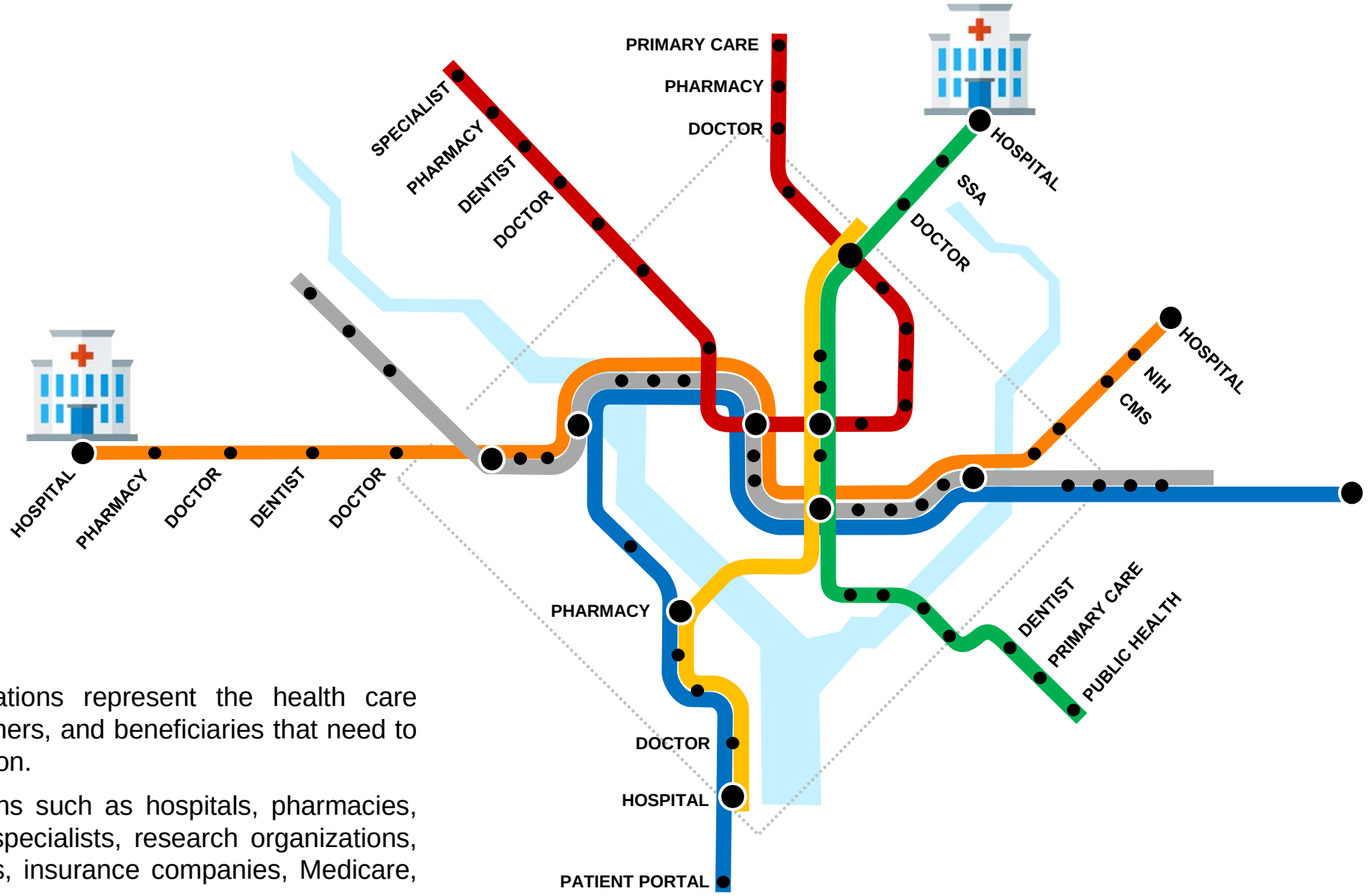
Much like a subway system that moves passengers from one location to another, the healthcare environment has a similar framework that can be used to illustrate how health information is shared.



Here, the different subway lines represent health exchange networks. Just like a subway line connects different locations, health exchange networks securely connect clinical data to different health care participants.



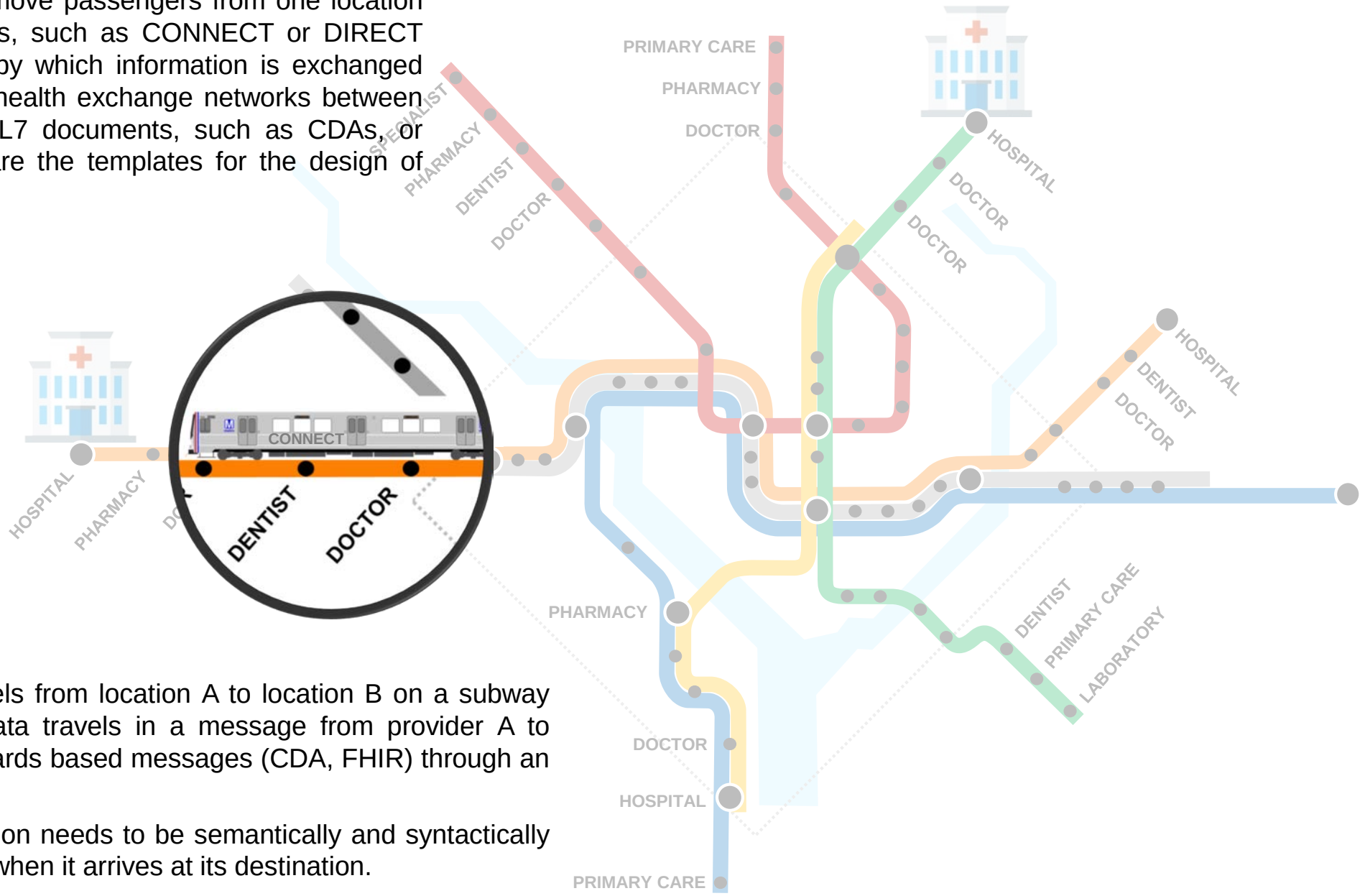
But just as the subway cars running on the red line cannot easily move to a different color line, **participants cannot communicate with other participants on different health exchange networks** because the networks use different communication protocols and legal agreements for the messages they send.



The different subway stations represent the health care providers, payers, researchers, and beneficiaries that need to exchange patient information.

These include organizations such as hospitals, pharmacies, primary care physicians, specialists, research organizations, public health organizations, insurance companies, Medicare, and care teams.

As subway trains securely move passengers from one location to another, secure gateways, such as CONNECT or DIRECT messages, are the means by which information is exchanged through the system on the health exchange networks between participants. The various HL7 documents, such as CDAs, or FHIR message standards are the templates for the design of the passengers in the trains.



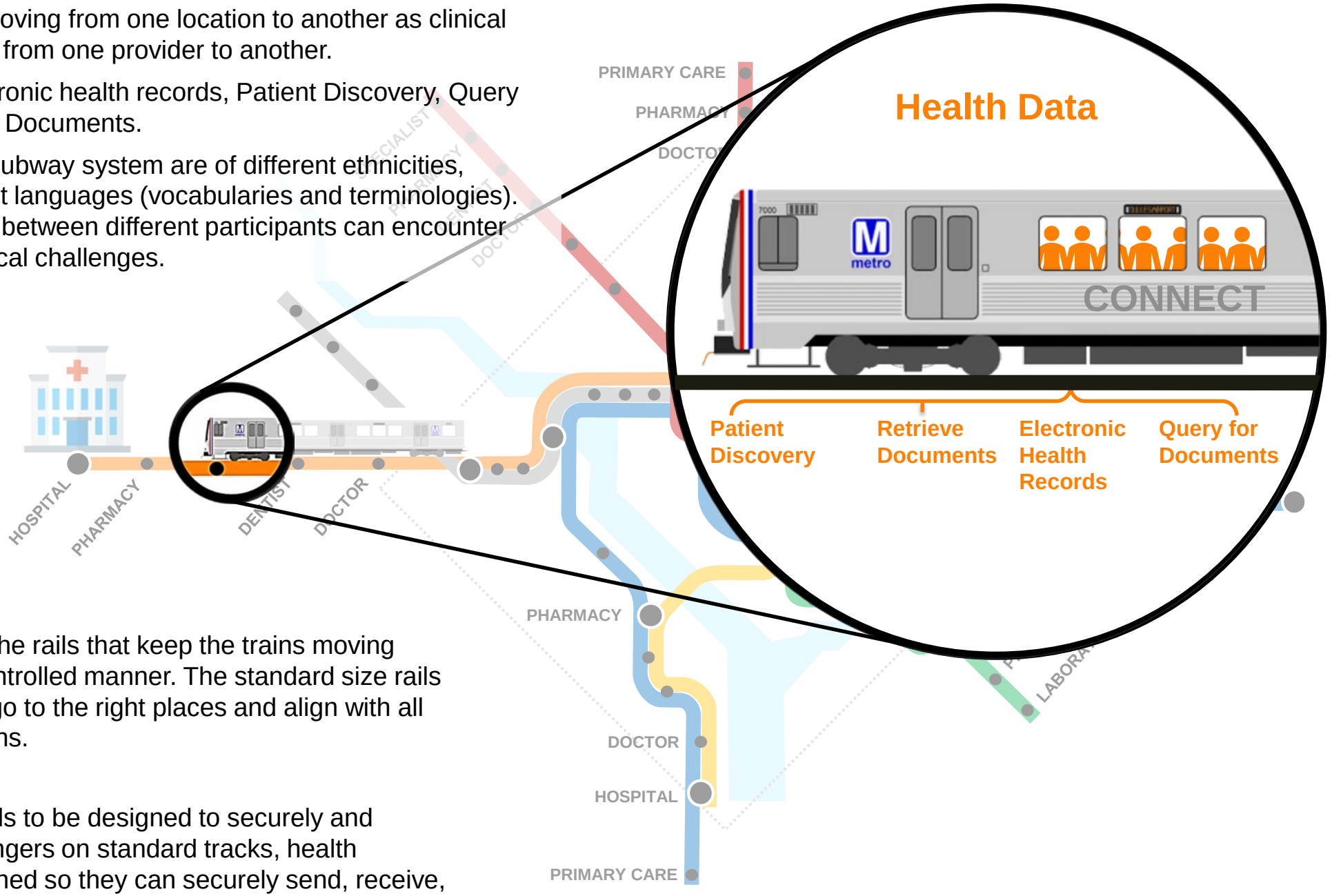
For example, a person travels from location A to location B on a subway train just like the patient data travels in a message from provider A to provider B, using HL7 standards based messages (CDA, FHIR) through an eHealth Exchange network.

In this process, the information needs to be semantically and syntactically consistent for it to be useful when it arrives at its destination.

Let’s compare passengers moving from one location to another as clinical data that needs to be moved from one provider to another.

This includes items like electronic health records, Patient Discovery, Query for Documents, and Retrieve Documents.

Passengers traveling in the subway system are of different ethnicities, countries, and speak different languages (vocabularies and terminologies). In the same way, exchanges between different participants can encounter multiple semantic and technical challenges.

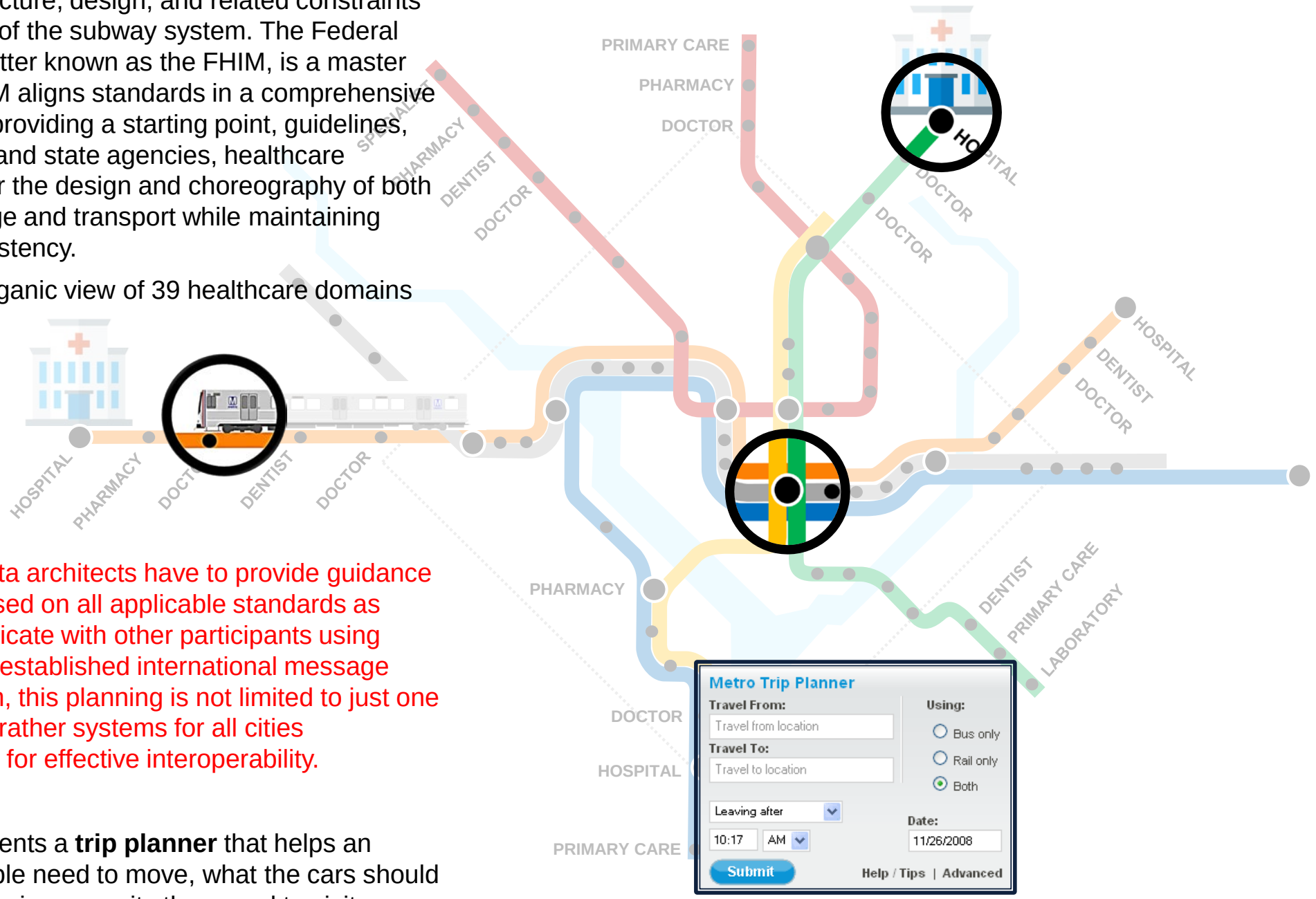


Implementation Guides are the rails that keep the trains moving along in a consistent and controlled manner. The standard size rails allows the subway trains to go to the right places and align with all current and future destinations.

Just like a subway train needs to be designed to securely and comfortably transport passengers on standard tracks, health exchanges need to be designed so they can securely send, receive, and understand data, based on standards and guidelines put into place by Federal and international healthcare IT communities.

A blueprint shows the architecture, design, and related constraints needed to create all aspects of the subway system. The Federal Health Information Model, better known as the FHIM, is a master metadata blueprint. The FHIM aligns standards in a comprehensive US uber information model, providing a starting point, guidelines, and tools needed by federal and state agencies, healthcare providers and researchers for the design and choreography of both healthcare information storage and transport while maintaining semantic and syntactic consistency.

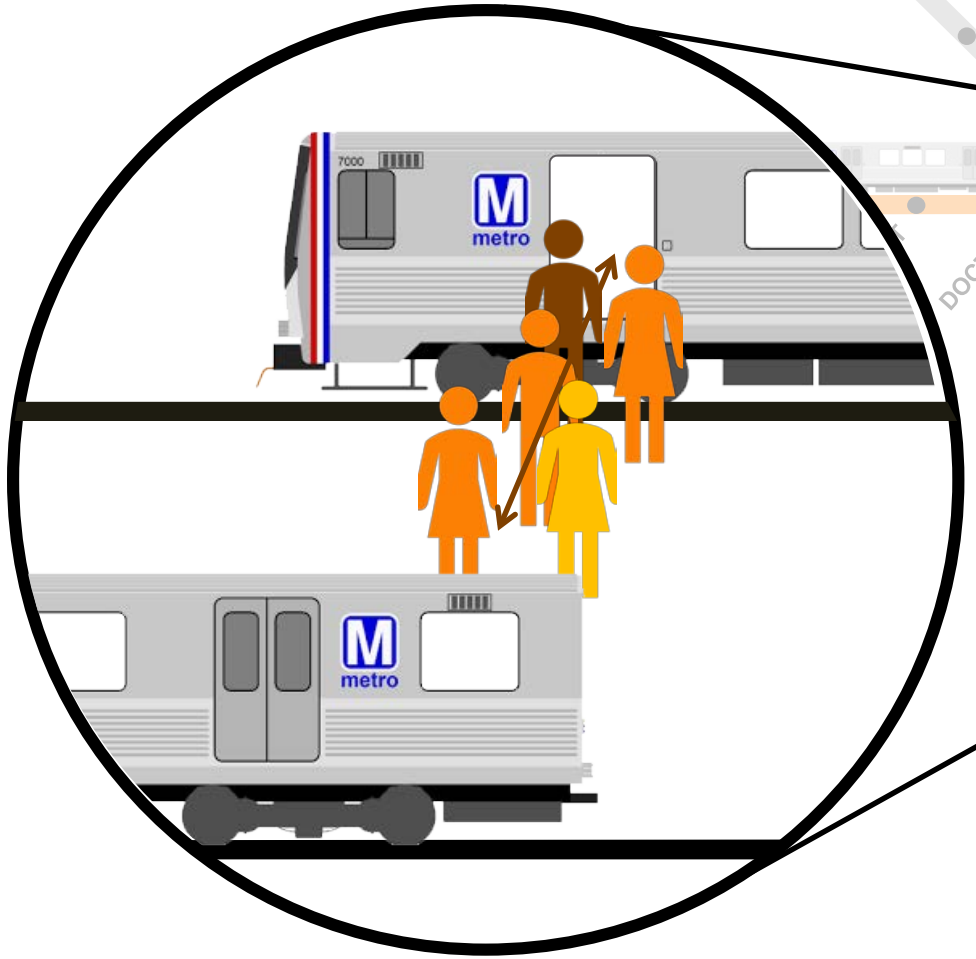
FHIM provides ~~an~~ holistic, organic view of 39 healthcare domains and terminologies.

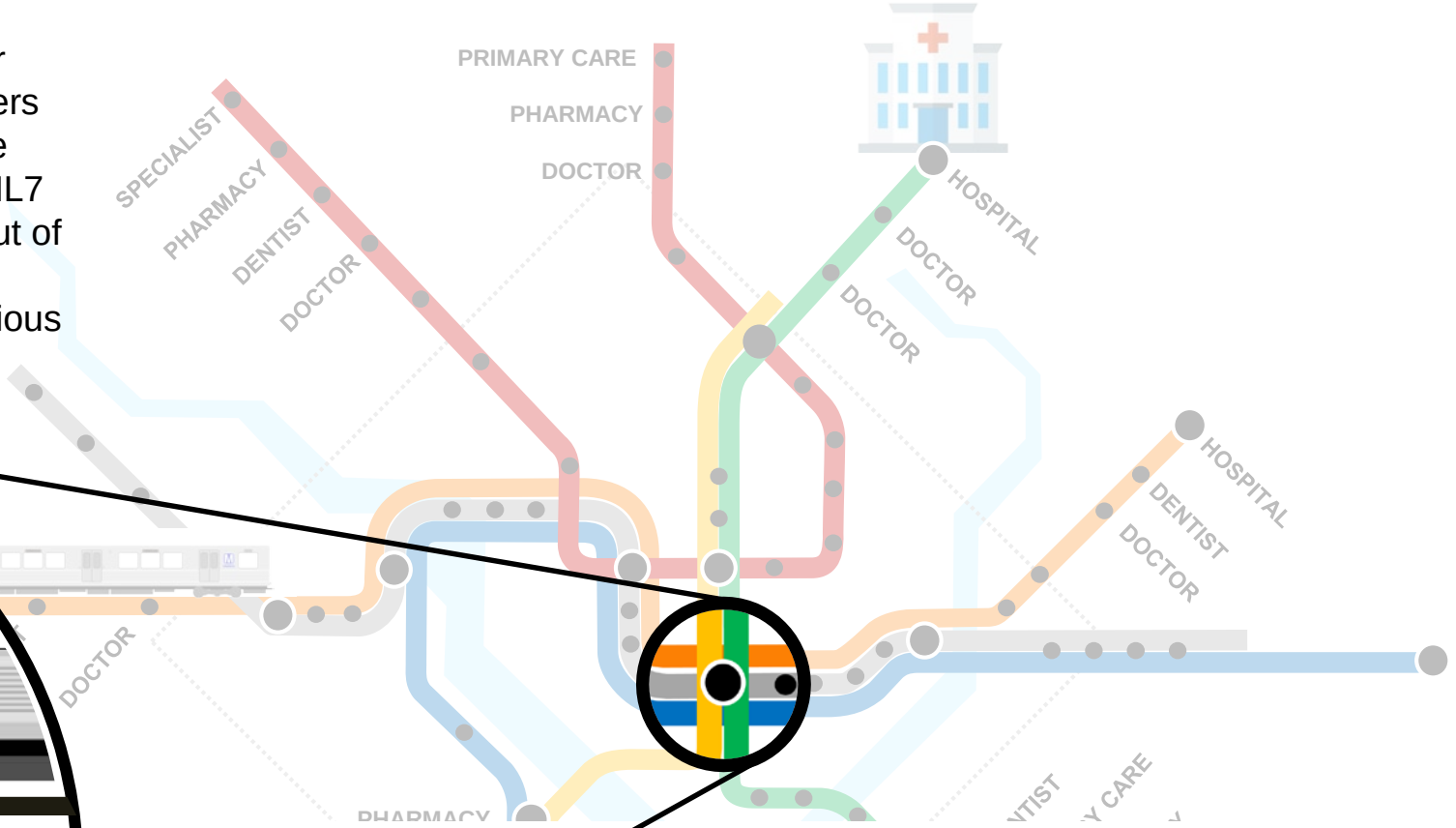


IT systems designers and data architects have to provide guidance to software implementors based on all applicable standards as participants need to communicate with other participants using standard reference data and established international message protocols. Unlike our diagram, this planning is not limited to just one city and subway system, but rather systems for all cities everywhere must be planned for effective interoperability.

The FHIM data model represents a **trip planner** that helps an organization define how people need to move, what the cars should look like, and what line to take in every city they need to visit now and in the future.

As architects use blueprints as one of the to ols to design subway systems, the FHIM is a **blueprint** for software implementers. The FHIM helps implementers with the design of the standard vocabularies and the FHIR resources. Since the FHIM is aligned to the HL7 FHIR data elements, items such as the interior layout of the trains, including design of chairs, windows and doors, are all guided by the FHIM classes in the various healthcare domains.





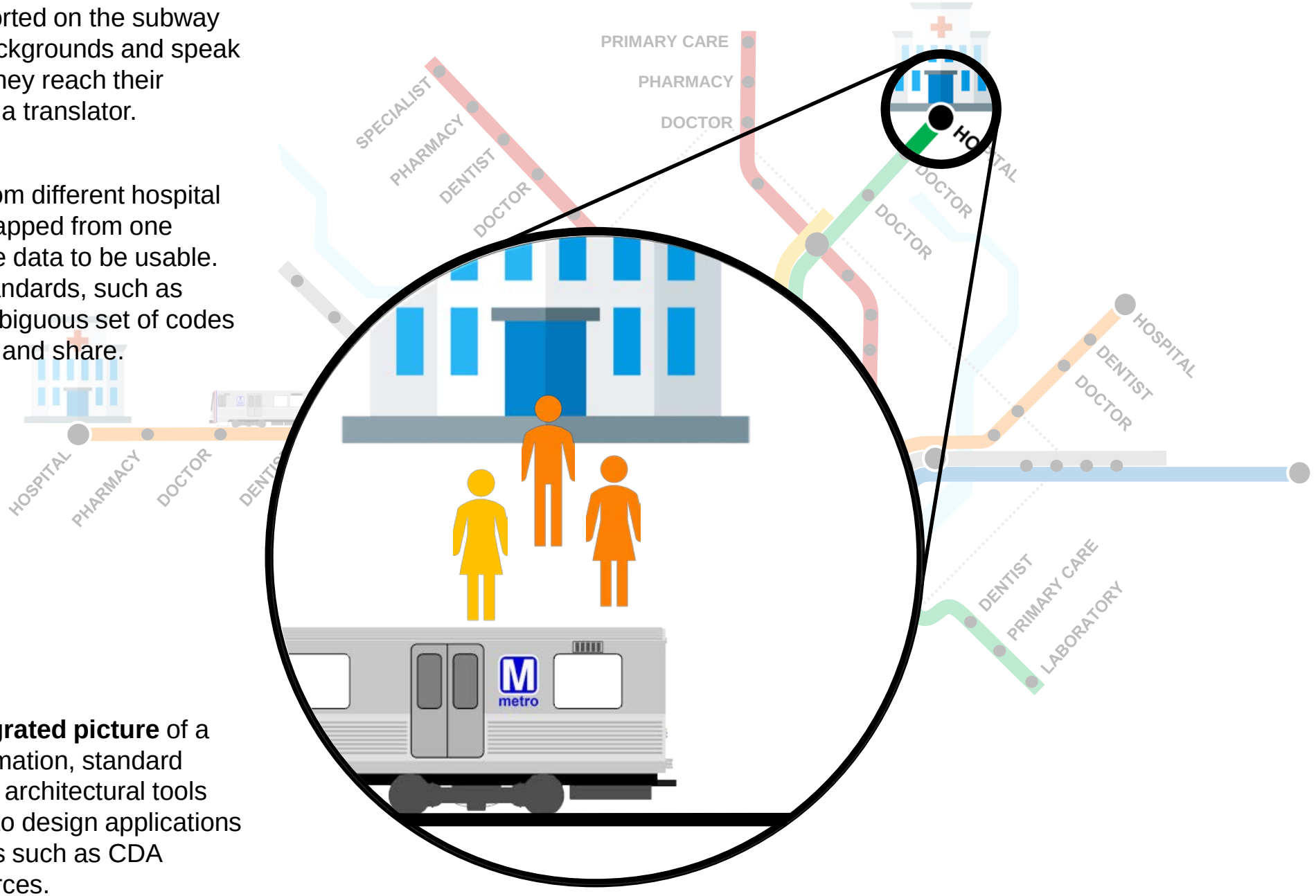
Narration:

Much like a subway train cannot easily switch lines, health data doesn't move easily from a health exchange network to another because of the different standards and protocols.

The FHIM knows how to translate from multiple standards and how to transform among multiple standards and protocols such as FHIR, CIMI models, and various CDA structures. Its supportive tooling, MDHT, **eliminates manual creation of Implementation Guides for the HL7 document standards (CDAx). Manual procedures introduce errors, which are difficult** and time consuming to find. This gives us reliable, smooth and uniform rails on which to travel.

Passengers that are transported on the subway system come from many backgrounds and speak different languages. When they reach their destination, they often need a translator.

Similarly, healthcare data from different hospital EHR systems need to be mapped from one vocabulary to another for the data to be usable. International Vocabulary Standards, such as SNOMED, provide an unambiguous set of codes which all providers can use and share.



The FHIM provides **an integrated picture** of a data model, standards information, standard reference terminologies and architectural tools needed for an implementer to design applications using various HL7 standards such as CDA documents and FHIR resources.

FHIM benefits

By providing a US and globally vetted view of the highly complex and ever changing healthcare environment, the FHIM data model provides the deep and consolidated metadata and tools needed in the coming years to build cost and time saving solutions. It is a bridge to future AI solutions. A picture of the Pharmacy model is shown below from the FHIMS.org collaborator's website.