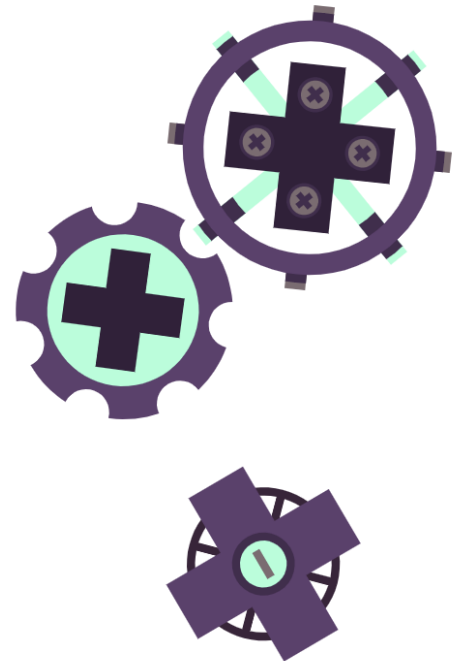




# Ribbon Health Data Accuracy & Network Freshness

Coverage for a provider's location and network status is critical for an accurate view of available care to meet a person's unique needs. At Ribbon, we view accuracy from the perspective of how to best enable patients to find reliable information on providers. Our methodology and principle focuses on surfacing the most valuable provider information for a member to find the care they need.



Read our frequently asked questions below.

## Where does Ribbon get its data?

**Data Aggregation** | We aggregate thousands of data sources from:

- ◆ Data Licenses (e.g., credentialing datasets, payer provider directories)
- ◆ Government data (e.g., CMS)
- ◆ Open web information (e.g., hospital directories)
- ◆ Proprietary data collection (e.g., Ribbon call center, customer data edits)
- ◆ Outside of healthcare (e.g., review and rating platforms)

While other solutions on the market may rely on just a few of these sources, Ribbon ingests thousands of sources to bring the most comprehensive provider data solution.



**Finding Truth** | As we ingest thousands of sources to produce the most comprehensive provider data solution, we also want to ensure the most accurate data for our customers.

- ◆ We typically see **~30 phone numbers per Doctor** and the average provider data source is **roughly ~50% inaccurate**.
- ◆ To account for these inaccuracies, our machine learning models rely on a powerful and large truth-set of data on providers that we get both from our call center as well as inputs and edits made by customers. For example, when an appointment is booked with a given Doctor and a specific location, we know that Doctor is working within that location.

By relying on a combination of these methods to validate accuracy, we can ensure we're bringing the most accurate information to our customers.

## What drives changes in the data?

### Change in In-Network Status

- ◆ The most common data change is associated with a doctor's network status for a particular plan.
- ◆ Network data changes at some small frequency throughout the year and undergoes significant changes leading up to and in the early parts of open enrollment.

### Change in Provider Location

- ◆ Practice locations close or are no longer in network with patient plan
- ◆ Providers move from a location and/or no longer see patients at that location, even if provider location is still listed in-network within a provider directory (Note: Payer provider directories are typically 50% accurate for directory information)
- ◆ Providers may have retired, left the practice, or moved out of state (e.g., If a provider joins another in-market practice, she will reappear in the data)



## New Signals in Data

- ◆ Providers were never seeing patients at that location, however they may have been listed as such, and Ribbon received signal of the incorrect data. This tends to occur when a doctor's claims billing address is mistakenly reported as the practice address in a provider directory source.
- ◆ New provider location appears within a provider directory which may or may not be accurate and Ribbon's models / outreach provide likelihood of accuracy

## How frequently is the data refreshed?

**Data Freshness** | Data Freshness measures progress and is a leading indicator of accuracy, but is not itself a measure of data accuracy. The provider data associated with an insurance network is reflective of the point in time when Ribbon last collected data. For instance, a provider who accepted patients enrolled in a given plan in March may no longer be accepting patients with that plan in August. Given these changes in provider networks throughout the year there can be a lag in the network status of providers, within our data as well as what is shown on insurance company directories.

**Frequency** | We do expect there to be a lag time when networks change between our data refreshes. This lag is seen when individual provider data is changed, removed, or added. Historically we've seen insurance data change about **~1-2% month over month** with some time periods (such as open enrollment) having greater fluctuation. The refresh rate can differ between carriers due to the following factors.

- ◆ Variation in complexity involved in data refreshes.
- ◆ The frequency at which we are provided updated data for particular sources.
- ◆ Priority order based on percentage of lives covered. Larger insurance carriers with larger percent of lives covered (i.e. United Healthcare) are refreshed more frequently and with greater priority than smaller regional carriers that have a smaller footprint.