Quest Analytics
Co-location
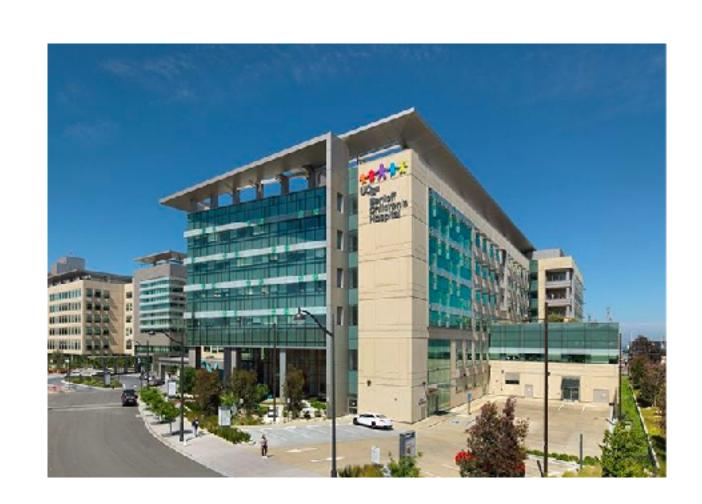
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Agenda

- What is co-location?

- Does co-location appear in other contexts?

- How can co-location be resolved?

- Interested in analyzing co-location data?

- Questions

Co-location

or, Unique Healthcare Organizations Located at the Same Physical Address

What is co-location?

Hospital-Based

Hospitals and health systems have multiple departments at one physical address.

Office-Based

Multiple clinics/physician practices are located at the same physical address, often even in the same suite.

Of the 770K healthcare organizations in Quest Analytics' data assets, an estimated **1% are co-located**. Because co-location disproportionately affects organizations with a large number of providers, **approx. 45% of providers are affiliated with at least one co-located practice**.

Why does co-location matter?

We lose the ability to distinguish between unique practice entities and their associated attributes

Patients

If patients leverage data sets containing co-located practices that mistakenly show a doctor or practice as being in-network for a given health insurance product, they may end up with **surprise medical bills for higher, out-of-network rates**.

Providers

If contact methods data for a co-located practice pollutes contact methods data for all other co-located practices at that address, **a subset of practices may receive outreach attempts for all practices at the address**.

Health Plans

During the outreach process, providers and admin staff may mark data for all co-located practices at a given address as inaccurate, resulting in further **degradation of the data quality health plans rely on** to remain compliant with regulations.

Does co-location appear in other contexts?

Direct Mail Marketing

"[A] form of direct marketing in which physical promotional materials are sent to prospective or existing customers."

Patient Matching

"[T]he process of comparing different demographic elements from different health IT systems to determine if they refer to the same patient."

How can co-location be resolved?

The state of provider data often compounds co-location problems

- **Missing**: Values for attributes used in identifying and resolving co-location issues are unknown or missing in error

- **Inconsistent**: A value for a given attribute is represented in different ways, despite all referring to the same entity

- **Temporal**: Attribute values are accurate at a given point in time but have not been updated to reflect changes in real-world entities

How can co-location be resolved?

Resolution occurs in two steps: co-located practices must first be identified and then split up

Identification

- Acquisition of new data sources
- Crude identification with manual investigation
- Algorithmic identification

Splitting

- Relationship building with health systems and large provider groups
- Targeted outreach
- Algorithmic splitting

How can co-location be resolved?

More generally, co-location is a problem relating to data modeling, UX design, and data quality

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- **Data Modeling**: Broader data model should provide flexibility regarding *when* and *how often* entities are identified in data

- **UX Design**: Online form and outreach processes should allow for customization depending on practice attributes, including co-location status

- **Data Quality**: Attributes used in co-location identification and splitting must be of high-quality to avoid the "garbage in, garbage out" principle

Interested in analyzing co-location data?

Slides from today's meetup, along with co-location data
and exercises, can be found on GitHub

github.com/melindaheard/quest_analytics_colocation

Questions?