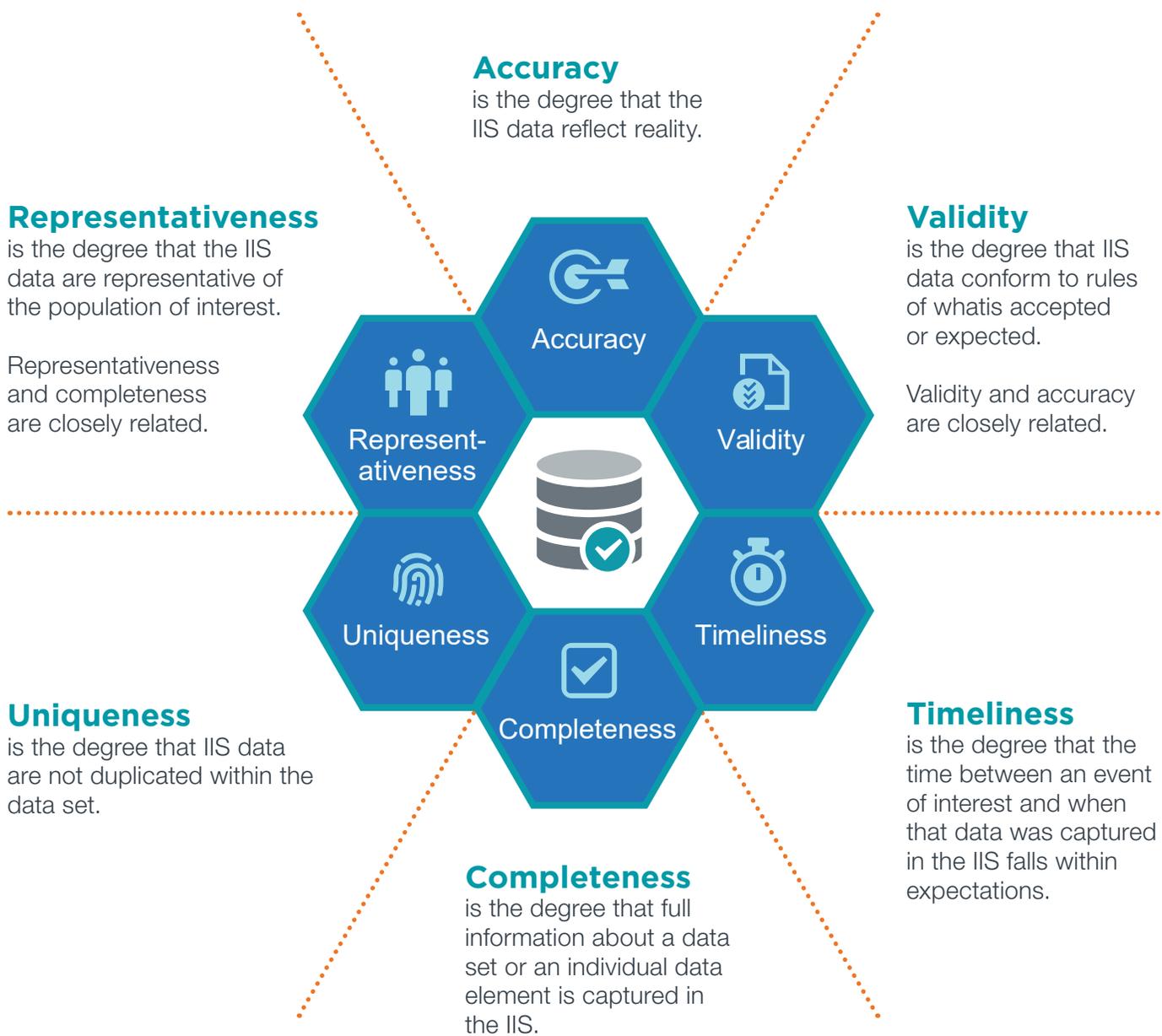# Dimensions of Data Quality

Data quality is a term used to describe the data's suitability for a specific use. Good data quality promotes use of the data by stakeholders; for example, by a clinician determining what vaccinations to give or by an immunization program tracking inventory of federally-supplied vaccines. Data of poor quality are unlikely to be used or trusted. The quality of IIS data can be described and assessed using six key dimensions:

Accuracy
is the degree that the IIS data reflect reality.

Representativeness
is the degree that the IIS data are representative of the population of interest.

Representativeness and completeness are closely related.

Validity
is the degree that IIS data conform to rules of whatis accepted or expected.

Validity and accuracy are closely related.

Accuracy

Represent-ativeness

Validity

Uniqueness

Timeliness

Completeness

Uniqueness
is the degree that IIS data are not duplicated within the data set.

Completeness
is the degree that full information about a data set or an individual data element is captured in the IIS.

Timeliness
is the degree that the time between an event of interest and when that data was captured in the IIS falls within expectations.

Key Questions by Dimension

Accuracy

Do the IIS data reflect reality?
- Do submissions reflect patient demographics and immunizations administered/recorded in the clinical encounter?
- Does the IIS data set reflect the population of the jurisdiction?
- Does the IIS data set reflect the immunizations of the population in the jurisdiction?

Validity

Do the IIS data follow rules of what is expected or acceptable?
- Are there data in the IIS that represent implausible scenarios (e.g., vaccination date after date of birth)?
- Are there data in the IIS that represent unexpected scenarios (e.g., vaccination other than Hepatitis B at birth)?

Timeliness

Are data available in the IIS in a timely manner?
- How quickly after a vaccine administration is that immunization record accessible in the IIS?
- How quickly after a birth in the jurisdiction is a new record established in the IIS?

Completeness

Do the IIS contain all relevant information?
- Does the IIS data set contain all residents in the jurisdiction?
- Does the IIS data set contain all immunizations administered/recorded to residents inside and outside the jurisdiction?
- Do submissions contain all patients and immunizations?
- What percent completed are fields containing demographic or immunization-related data?

Uniqueness

Is data only recorded once in the data set?
- Are patient records appropriately deduplicated?
- Are immunization records appropriately deduplicated?

Represent-ativeness

Are the IIS data representative of the population of interest?
- Are the IIS patient data reflective of the population in the jurisdiction?
- Are the IIS immunization data reflective of the immunizations administered in Completeness the jurisdiction?
- Are the IIS immunization data reflective of the immunizations administered to residents in the jurisdiction?