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Clinical Data Models and Common Data Models

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1. A data warehouse harmonizes data from different systems into a logical and consistent format. Which of the following is not part of this feature:

1 / 1 point

- [ ] The dates 1-March-2018, 3/1/18 and Mar-2018 would be assigned the value 2018-03-01
- [x] A list of 5 values for eye color would be expanded to a larger set of 25 values

Correct
Correct! A DW may use a reduced value set or may be forced to using a larger value set depending on the requirements

- [ ] The values Bob, Robert, and Billy would be given a single standard name
- [x] A list of 25 values for eye color would be reduced to a smaller set of 5 values

Correct
Correct! A DW may use a reduced value set or may be forced to using a larger value set depending on the requirements

2. In the ERD states that "a patient and a provider may participate in one or more visits but a visit can only involve a single patient and a single provider." Which of the following is true given this model design?

1 / 1 point

- [x] Providers who have not seen any patients cannot be entered into this database

Correct
Correct!

- [x] Patient who are seen by multiple providers during the same visit can only have one of the providers entered into this database

Correct
Correct!

- [x] Patients who have not been seen by any provider cannot be entered into this database

Correct
Correct!

- [ ] Providers who see multiple patients can only have one of the patients entered into this database

3. What is the purpose of comparing the Visit Start_Date and the Prescription RX_Date_Written fields?

1 / 1 point

- ( ) You need to make sure that the visit happened before the prescription was written
- (•) You need to make sure that the prescription was written on the same date as the visit
- ( ) You need to make sure that the prescription was not written on the same date as the visit
- ( ) You need to make sure you do not have a procedure performed on the same date as when the prescription was written

Correct
Correct!

4. Imagine doing this study on a database that was 1/10th the size of the example database -- one that had 9,000 female patients resulting in 68 patients in the "On Treatment" group and 185 patients in the "No Treatment" group. Which of the following might happen using this database:

1 / 1 point

- ( ) We have too many patients in the "No Treatment" group
- ( ) We are missing patients who started on treatment and moved to no treatment and patients who started on no treatment and moved to on treatment
- ( ) Too many patients were dropped from the two groups

- Too many patients were dropped from the two groups

- We have too few patients in both groups to get stable statistics. The study is now statistically under-powered

Correct

Correct! This is the correct answer but students may not know the concept of statistical power to appreciate the second sentence

5. I2b2 uses a folder metaphor for including one or more terms in a query. Which of the following would be a limitation of this approach to constructing queries: **1 / 1 point**

- It is difficult to understand all of the terms that are actually included in a query
- It is difficult to impose temporal constraints on folders
- It is difficult to include additional terms that are not included in the folder
- It is difficult to represent multiple hierarchies using folders

Correct

Correct! Folders only allow one hierarchy to be represented. In i2b2, the usual hierarchy is the "IS-A" or subsumption hierarchy

6. OMOP is an example of a relational database where different data domains, such as Person, Visits and Drug Exposures have different tables to store data on these domains. What is a weakness of using a relational design **1 / 1 point**

- A relational design does not capture temporal features
- A relational design can only store pre-specified values
- A relational design is less flexible than other database designs
- A relational design is more difficult to query than other database designs

Correct

Correct! Relational designs tend to require more JOINs across multiple tables, making them more difficult to query