

NHIA v2 Diagrams

Notation for Diagrams

Unified Modeling Language (UML) diagramming instruments were used to describe the NAACCR Hispanic identification process. UML, a standard modeling language, represents a collection of the best engineering practices that have proven to be successful in modeling large and complex systems and processes. Two diagrams (Figures 1 and 2) depict the NAACCR Hispanic/Latino identification v2 process. The diagram legend presented in Figure 3 describes elements (building blocks) of diagrams and is intended to help readers navigate the diagrams and interpret their meanings.

Elements used in UML class and activity diagrams of Hispanic identification process include (see Figure 3 for a pictorial representation):

- **Class.** Represents a tangible thing, for example – a data item.
- **Use Case.** Represents a process in the form of narrative/description (scenario).
- **Activity node.** Represents a business process, operation, or activity. The activity node is shown as a shape with a straight top and bottom, and with convex arcs on the two sides. Activity nodes are shaded blue. Examples of activity nodes in Figure 5 are *Evaluate Data Item 190 code values* and *Assign Surname Codes from the Spanish Surnames List*.
- **Note.** Used for descriptive text. A note is shown as a dog-eared rectangular shape with its upper-right corner bent.
- **Object.** Represents inputs and outputs for activity nodes. An object is shown as a rectangle. Examples of objects in Figure 5 include *Spanish Surnames List* and *3: Set of Cases for Indirect Identification*.
- **Object Flow (Input/Output).** Input/Output connection between an object and an activity node (*object flow*) is shown as an arrow.
- **Synchronization bar (horizontal or vertical).** Used to depict parallel processing. A synchronization bar is shown as a bold black line.
- **Transition.** Transition between activities is shown as a solid black arrow.

Diagrams Descriptions

The diagram in Figure 1 (Elements of NAACCR Hispanic Identification Process) depicts data items relevant for Hispanic/Latino identification in a central cancer registry. A class (rectangular shape), color-coded green, represents each data item. Lists of data items codes are represented with classes (rectangular shapes), color-coded yellow. Information external for the NAACCR case record layout includes Spanish Surname List, which is color-coded white. Hispanic identification process is depicted with a blue oval shape. Dashed arrows on this diagram indicate “dependency” relationships: Hispanic identification process depends on getting information from data items 190, 2230, 2390, 220, 250, 90 and 160; a new data item (similar to data element 190) depends on results of Hispanic identification process to assign proper code values to cancer cases.

The diagram in Figure 2 (Process Map: NAACCR Guideline for Hispanic Identification in a Central Cancer Registry) represents the algorithm for Hispanic identification in a central cancer registry. The process is portrayed with activities (blue shapes) and objects (rectangular shapes) that represent inputs and outputs (products) of activities. Hispanic identification includes consecutively implemented filtering steps that stratify initial set of cancer cases based on filtering criteria. Each set of cases is a result of accumulated decisions made on all the previous filtering steps. Such accumulation is reflected inside of the objects (rectangular shapes) that represent sets of cases. For example, Set of Cases for Indirect Identification (marked number 32 at the top right corner of the box) contains cases with Data Item 190 code values 7, 9, and 0 (optional) – according with step 1, as indicated with “1A” and “1B”; plus these

cases were filtered out with the Birthplace criteria (according with step 2, as indicated with “2C”) and with the Race criteria (according with step 3, as indicated with “3B”). Additionally, the number 32 points out that this set of cases is produced at the step 3.

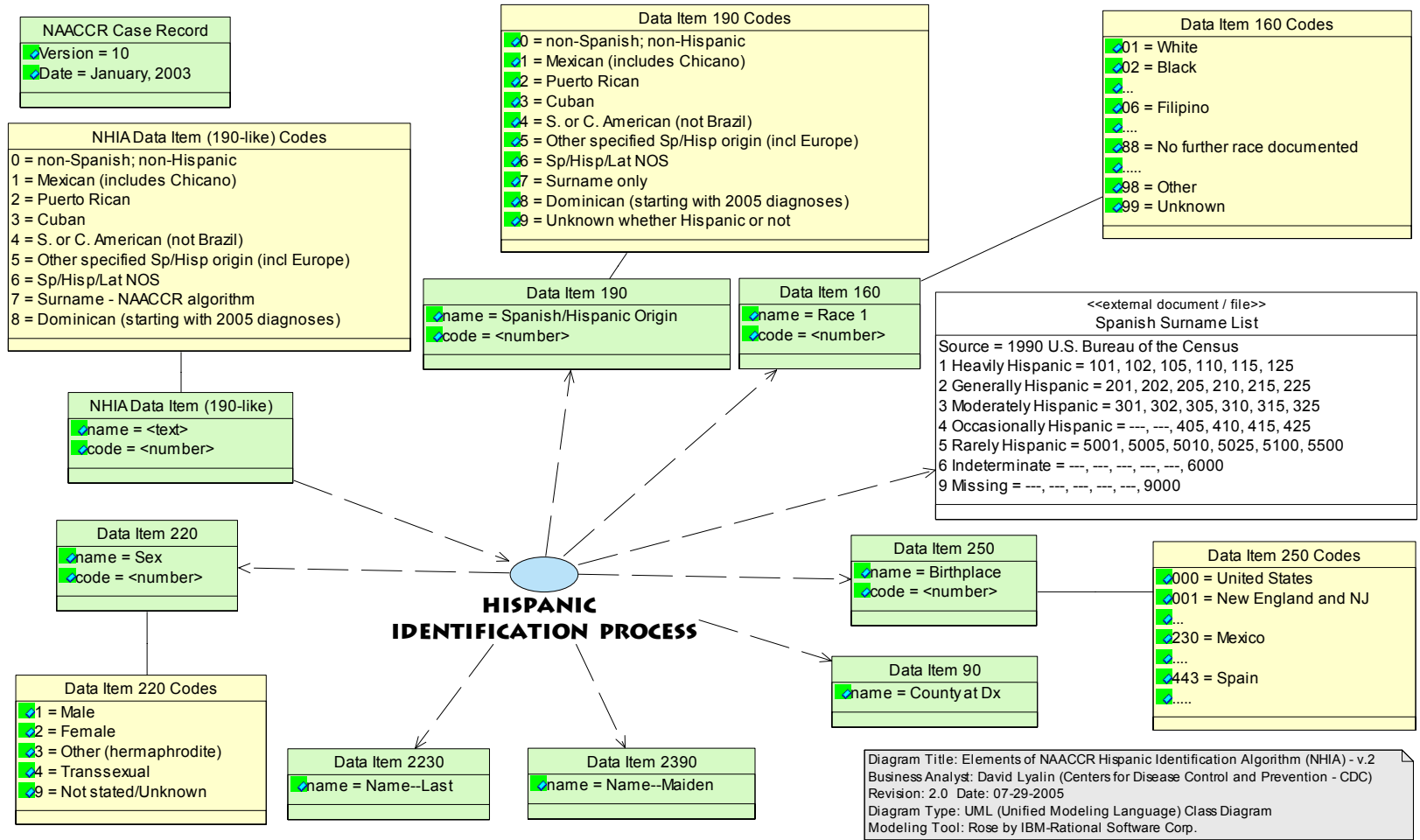
There are two possible outcomes for each cancer case from NHIA v2: Hispanic (sets of cases/objects color-coded pink) or non-Hispanic (sets of cases color-coded light brown). Intermediate sets of cases (“in-process” sets/objects) are color-coded with green. Objects with supporting information, like code values for data items, are color-coded yellow. A new Data Item (190-like) for cases identified as non-Hispanic is updated with a code 0 (zero), and for cases identified as Hispanic, with codes 1 through 8.

References

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6. Word DL, Perkins RC, Jr. *Building a Spanish Surname List for the 1990's B A New Approach to An Old Problem*. Population Division Working Paper No. 13. Washington DC: U.S. Bureau of the Census. March 1996. [<http://www.census.gov/population/documentation/twpno13.pdf>, accessed February 16, 2003].
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Figure 1

ELEMENTS OF NAACCR HISPANIC IDENTIFICATION ALGORITHM (NHIA) - V. 2



PROCESS MAP: NAACCR HISPANIC IDENTIFICATION ALGORITHM (NHIA) - V. 2

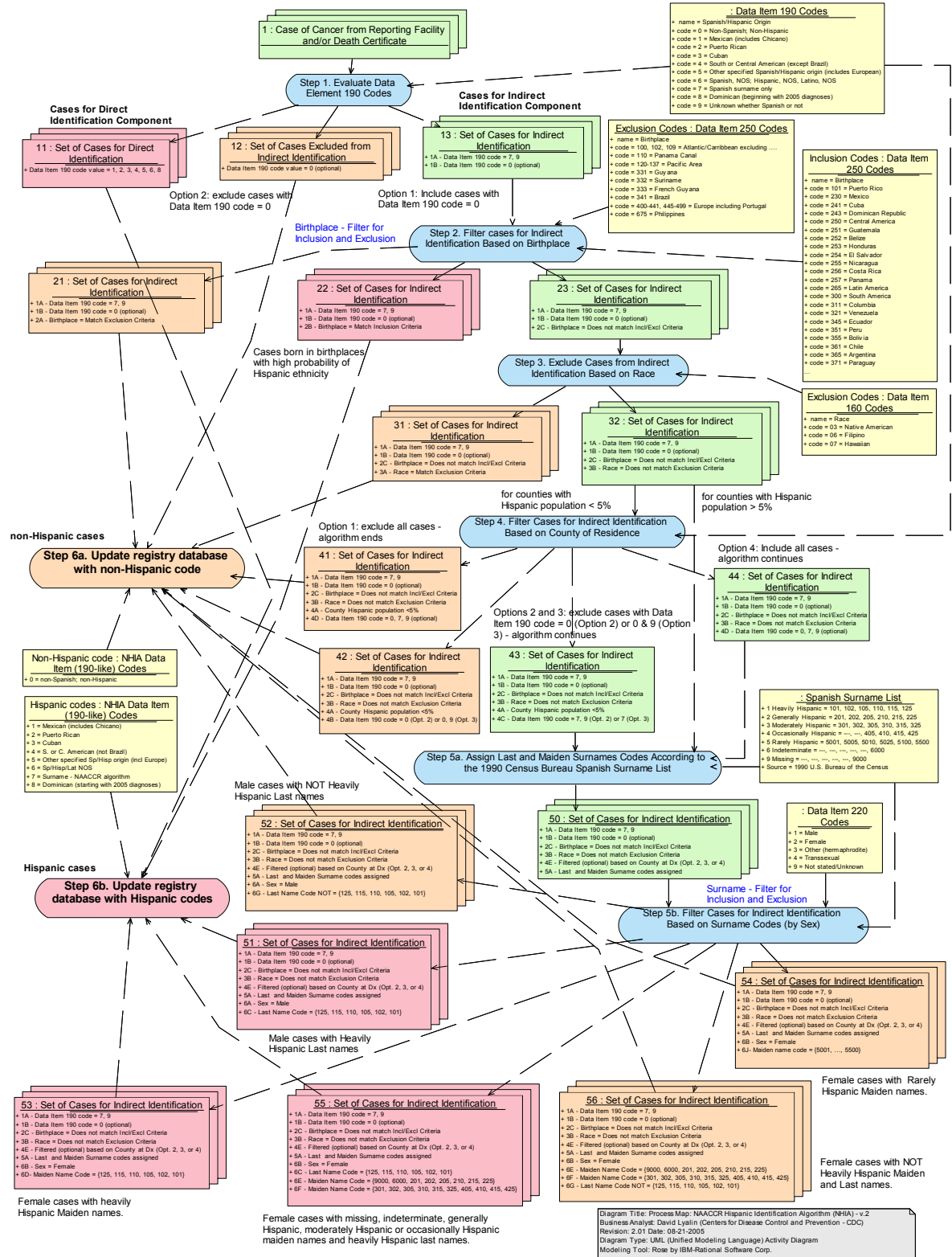


Figure 3.

