



DATA ITEM CONSOLIDATION



NAACCR Standardization and Registry Development Steering Committee
NAACCR Data Item Consolidation Task Force
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Data Item Consolidation Work Group (DIWG)

- The purpose of the DIWG is to document consensus best practices for consolidating discrepant values for the same patient and tumor from different reporting sources into a single best value for analysis purposes in the central cancer registry.
- Where consensus is not possible, the DIWG is to document different practices that are used.

Data Item Consolidation Document

- The DIWG has documented a list of applicable logical rules in a proposed order of application, usually ending with a step to review manually if the prior steps do not result in a single value.
- The document is currently in draft form.

Data Item Consolidation Document

- Central registries can use the documentation to assess their current practices and to consider changes to their system.

Before Consolidation Can Take Place

- Edits/Visual review
- Patient linkage
- Tumor linkage

Edits/Visual Review

- Data should be complete and accurate prior to consolidation
 - At a minimum, data should pass standard setter required data edits
 - Visual review should be performed prior to consolidation if resources allow.

Patient Linkage

- The incoming source records must be linked to any existing records for the same patient in the database.

Tumor Linkage

- Once linked to a patient, the incoming source records must be linked to any existing records for the same tumor.

Assumption

- Incoming records are complete and accurate

Data Item Consolidation

- Each registry will make its own decision about the applicability of the rules to their registry based on the purpose, philosophy, operational approach, and available resources.

Manual Review vs Automation

Accuracy vs Specificity

Cost and Timeliness

Automation vs Staff Review



Automation vs Manual Review

- Most registries already apply a mix of automated and manual methods to achieve a consolidated record.
 - The level of automation varies among registries
- It is not the purpose of the DIWG to establish a standard for the amount of automation to use in consolidation.

Approach 1

- Incoming records are processed and consolidated individually (using a combination of automated and manual procedures) and then added to the database.
- Source records that need further manual review are sent to a 'pending file' while awaiting the information needed by the reviewer to determine best data values.
- Cases are not added to the central registry database until all values have been resolved.

Approach 2

- All incoming records are consolidated automatically using electronic algorithms and immediately added to the database.
- During this process, status codes (or ‘flags’) are assigned to records needing manual review; records are subsequently reviewed after they have been added to the database.

Weighting Source Records

- Class of Case
- Golden Reporter
- Reporting Source

Data Item Categories

- Demographics
- Tumor Data Items
- Stage
- Treatment

Demographic Data Items

- Characterize the person with cancer, not the tumor or the treatment for the disease.

Race 1 [160]

Data Item Name [#]:

Date: 6/25/13, rev. 7/24/13

Step 1	Known over Unknown	Unknown Value	Known Value	Comment
		99	01-98	Unknown defined as 99
		Select any known race value 01-98 over 99 (unknown).		
Step 2.1	More Specific over Less Specific	Less Specific	More Specific	Comment
		98	03-97	
		Select any specific race value 01-97 over 98 (other race).		
Step 2.2	More Specific over Less Specific	Less Specific	More Specific	Comment
		15	16, 17	
		Select value 16 (Asian Indian) or 17 (Pakistani) over 15 (Asian Indian or Pakistani).		
Step 2.3	More Specific over Less Specific	Less Specific	More Specific	Comment
		96	04-06, 08-17	
		Select any specific Asian race code 04-06, 08-17 over code 96 (Asian, NOS)		
Step	More Specific over			

Issues to Consider

If consolidated value of Race 1 is 01 and the value of Race 2 is 02-32, 96-98	Flag for Manual Review
If consolidated value of Race 1 is equal to any of Race 2, Race 3, Race 4, or Race 5	Flag for Manual Review
If one of Race 2, Race 3, Race 4, or Race 5 is 07	Flag for Manual Review
If consolidated value of Race 1 is 98 and any of Race 2-5 is coded 02-32, 96, 97	Flag for Manual Review
If consolidated value of Race 1 is 97 and any of Race 2-5 is coded 07, 20-32	Flag for Manual Review
If consolidated value of Race 1 is 96 and any of Race 2-5 is coded 04-06 08-17	Flag for Manual Review

Tumor Data Items

- Data items that are linked to the tumor record and describe the tumor.
 - Date of Diagnosis, Primary Site, Histologic Type, Behavior, Grade, Laterality, Diagnostic Confirmation, and Type of Reporting Source
 - Address at Diagnosis is included with these data items.

Data Item Category: Tumor

Date: 4/22/2013

Step 1	Analytic	Non-Analytic	Comment
Analytic vs. Non-Analytic	Class of Case <= 2	Class of Case > 2	Could use Hierarchy codes
Step 2	Unknown Value	Known Value	Comment
Known over unknown subsite	Cxx.9	Cxx.0-Cxx.8	Unknown defined as 9; eliminate 9 if any other value 0-8
Step 3	Use Multiple Primary Rules		Comment
			Possibly use manual review flag

Class of Case

Class of Case Codes Categorized By Group		
Class of Case Group	Code	Code Description
Diagnosis Only/No Treatment at Reporting Facility		
0	00	Initial diagnosis at the reporting facility AND all treatment or a decision not to treat was done elsewhere
0	30	Initial diagnosis and all first course treatment elsewhere AND reporting facility participated in diagnostic workup (for example, consult only, treatment plan only, staging workup after initial diagnosis elsewhere)
Diagnosis And All or Part First Course Treatment at Facility		
1	10	Initial diagnosis at the reporting facility or in a staff physician's office AND part or all of first course treatment or a decision not to treat was at the reporting facility, NOS
1	11	Initial diagnosis in staff physician's office AND part of first course treatment was done at the reporting Facility
1	12	Initial diagnosis in staff physician's office AND all first course treatment or a decision not to treat was done at the reporting facility

Behavior Code ICD-O-3 [523]

Data Item Category: Tumor

Date: 8/21/13

Step 1	Comment
Linked with Histology	Consolidate value based on the selected histology code (# 522)
Step 2	Comment
Step 3	

Laterality [410]

Data Item Category: Tumor

Date:9/17/2013

Step 1

Comment

Known over Unknown

Step 2

Comment

If consolidated histology Hematopoietic or Kaposi Sarcoma select laterality from case that primary site was selected from
See Laterality Pairs Table A Wilms, Retinoblastoma, epithelium ovarian, or inflammatory breast primaries.

Laterality Pairs Tables

See Laterality Pairs Table B for primary sites not listed on the Paired Organ Table (see Table D)

See Laterality Pairs Table C for primary sites listed on the paired Organ Table (Table D).

Step 3

Comment

Visual Review

Laterality



Table C: Primary Site listed on the paired organ table (Table D)			
Laterality 1	Laterality 2	Consolidated Laterality	Manual Review
0	0	0	No
0	1	1	No
0	2	2	No
0	3	3	No
0	4	4	No
0	5	5	No
0	9	9	No
1	1	1	No
1	2	1	Yes

Collaborative Stage Data Items

- Two approaches
 - Same Source
 - All Stage information is selected from one source record based on the record selected for SEER Summary Stage using SS_2000 Decision Table
 - Individual Stage Items Consolidated
 - All stage data items including individual Collaborative Stage data elements are consolidated. The Derived fields are not consolidated but are re-calculated based on the values in the individual data elements in the Consolidated Record.

Treatment

- Data items associated with patient treatment on the tumor record.
 - Treatment data items: Surgery Primary Site, Scope Regional Lymph Node Surgery, Surgery Other Regional/Distant Sites, Rad- Regional RX Modality, Chemotherapy, Hormone Therapy, Immunotherapy, Hematologic Transplant and Endocrine Procedures.

Treatment Date Items

- Date of treatment and the treatment flag should come from the record from which the treatment code was selected.
 - For example:
 - Hospital A and Hospital B submit an abstract on the same tumor.
 - After running each case through the consolidation rules it is determined that the code from Hospital A will be used.
 - The date of treatment and treatment flag from Hospital A will be used in the consolidated record.

Surgery Primary Site (2003+)_ [1290]

Data Item Category: Treatment

Date: 11/13/2013

Step				Comment
1				
	Compare surgery primary site of incoming record to surgery primary site of record in central DB; if match then skip. For cases diagnosed in 2003+			
Step	Known over unknown	Unknown Value	Known Value	Comment
2		99	10-90	
	Eliminate 99 if any other value.			
Step	Known Over None	None	Known Value	Comment
3		00	10-90	
Step	More Specific Over Less Specific Codes	Less specific	More specific	Comment
4		90	10-80	
		80	30s-70s	Resection, NOS
Step	Higher code Over lower Code	Lower code	Higher code	Comment
5		10s	20s-80	
		20s	30s-80	
		30s	40s-70s	Specific surgery codes vary by cancer site. This just a general logic.
		40s	50s-70s	
		50s	60s-70s	
		60s	70s	

Appendix

- An alphabetic listing of consolidation rules/commands commonly used in central registries.

Recommendations

- Test Different Approaches with Comparison of Consolidation Results
- Introduce Concept of “Best Source” tracking at the variable level (or group of variables) beyond Class of Case or Type of Reporting Source
- Maintenance of Existing Business Rules
- Enhance consolidation rules to incorporate new data sources and new data types
- Enhance consolidation rules to incorporate new or revised coding systems and/or standards

Questions?

