Informatics Tools and Processes for the XML Data Exchange Standard

JULY 22, 2020

Q&A

Please submit all questions concerning the content of the webinar through the Q&A panel

- Submit questions immediately

If you experience technical difficulties please call us at 217 698 0800 x 111

Guest Presenters

Utah Cancer Registry Conversion to NAACCR XML: Best Practices and Lessons Learned
Valerie Yoder, BS
Informatics, Utah Cancer Registry

File*Pro NAACCR XML Handling
Fabian Depry, MS
Senior Systems Analyst, Information Management Services

A Command-Line Tool for NAACCR XML Processing
Isaac Hands, MPH, PhD
Lead Software Architect, Kentucky Cancer Registry

Transitioning to the NAACCR XML Data Exchange Standard: XML Exchange Plus and Beyond
Michele Esterly, BS
Employed by Katmai Government Services

HEALTH
UNIVERSITY OF UTAH

Utah Cancer Registry Conversion to NAACCR XML: Best Practices and Lessons Learned

Valerie Yoder, BS
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NAACCR XML Informatics Tools Webinar
July 22, 2020

Introduction

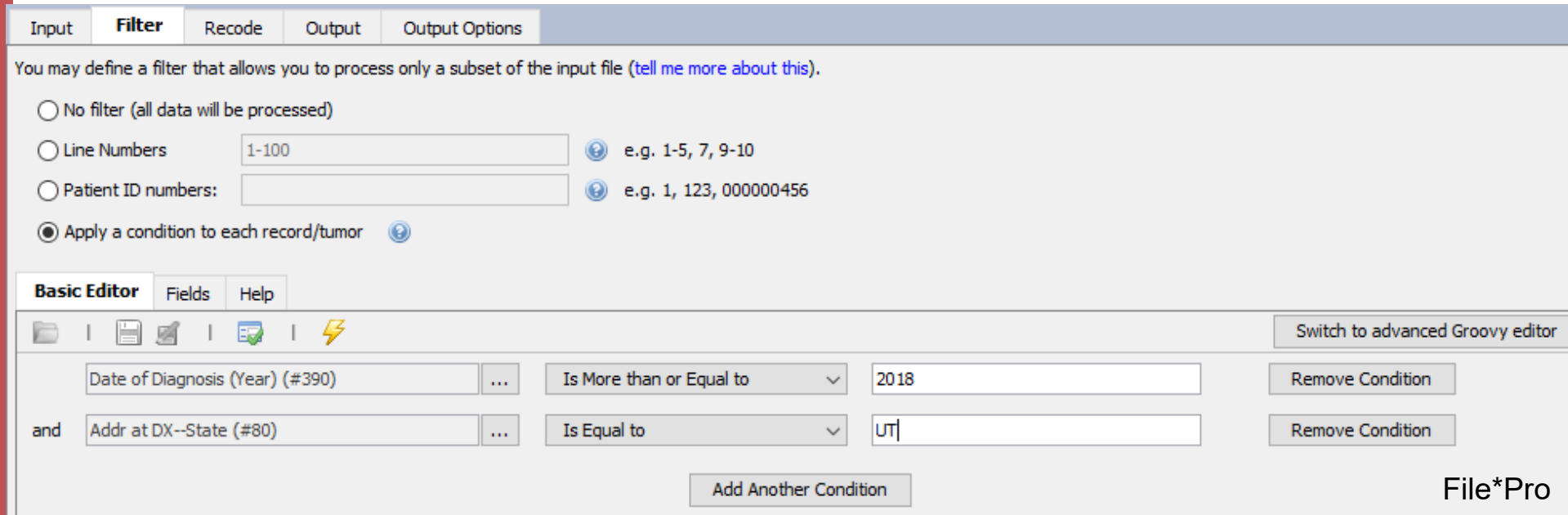
- XML Workgroup has been preparing to support you
  - –Vendors are ready
  - –EDITs run on XML
  - –Great software tools
    - Conversion
    - Linkage
- Get Informed
  - –https://naaccr.org/xml
- Get Help
  - –https://www.naaccr.org/forums/forum/naaccr-xml-standard/

Introduction

- No conversion to fixed-width for cases diagnosed in 2021+, or transmitted in v21 format
- Identify registry processes that read or write abstracts
- State/Requestor data items
  - User dictionaries

Process: splitting files

Old Tool fixed-width	SAS or Microsoft Access
New Tool XML	File*Pro



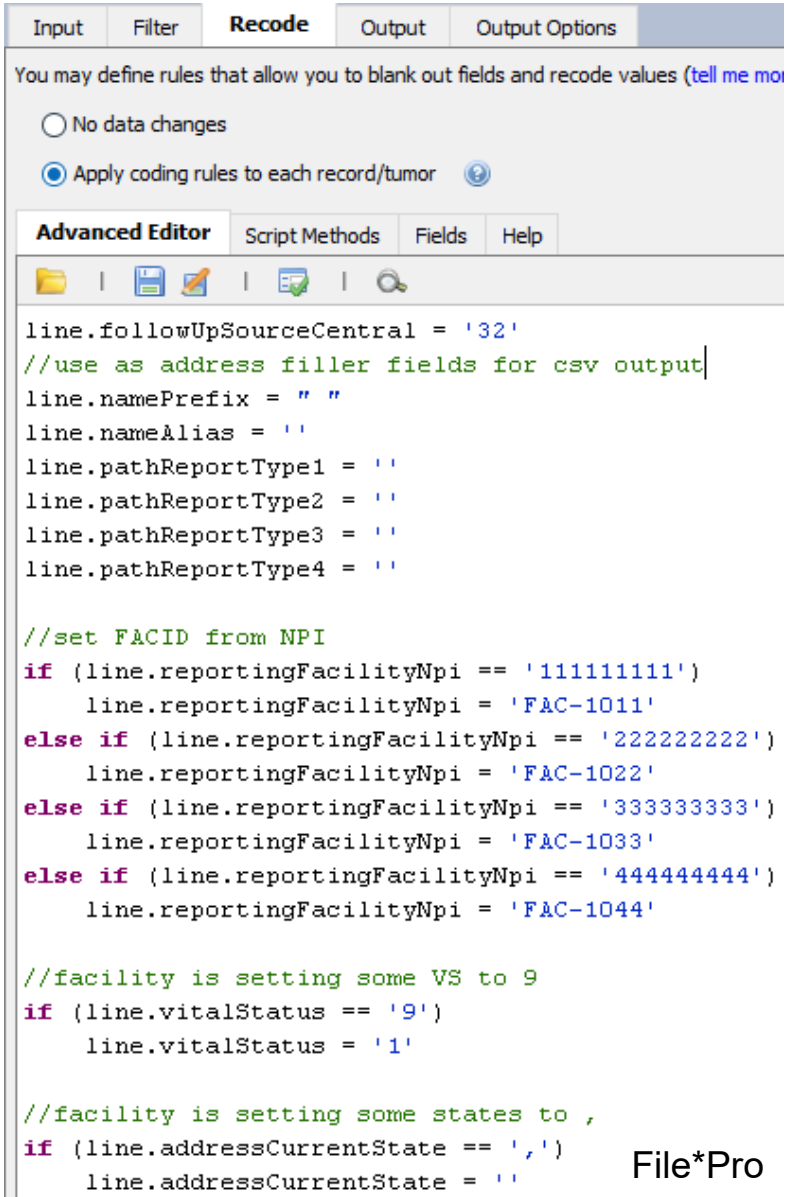
File*Pro

Process: write or run edits, prepare submissions

Old Tool fixed-width	GenEDITS Plus, EditWriter, NAACCR Prep, SEER Edits, etc.
New Tool XML	No change *considered need to routinely validate files: not necessary, but tools exist (NAACCR XML Utility, XML Exchange Plus)*

Process: mass change data

Old Tool fixed-width	SAS or Access
New Tool XML	File*Pro, XML Exchange Plus



File*Pro

Process: extract set of data items for data analysis, convert files

Old Tool fixed-width	SAS, Access
New Tool XML	SAS macro, File*Pro, XML Exchange Plus

```
data abstractdata;
 infile &name lrecl = 24194 pad missover;

    input @20   NPI              $char10. @; *45_NPI-
    input @745  Accession_Number $char9.  @; *550_Acc
    input @50   PatSysID         $char8.  @; *21_Pati
    input @40   HospTRN          $char2.  @; *60_Tumo
    input @554  Site             $char4.  @; *400_Pri
    input @544  DxYear           $char4.  @; *530_YEA
    input @4328 SSN              $char9.  @; *2320_So
    input @4315 MRN              $char11. @; *2300_Me
    input @226  DOB              $char10. @; *240_Dat
    input @4049 LName            $char40. @; *2230_Na
    input @4089 FName            $char40. @; *2240_Na
run;
```

```
%include "C:\tmp\NAACCR_XML\read_naaccr_xml_macro.sas";
%readNaaccrXml("C:\tmp\NAACCR_XML\naaccr-xml-6.8-sas.jar", &name, naaccrversion="180",
               recordtype="A", dataset=abstractdata,
               items="npiReportingFacility,accessionNumberHosp,patientSystemIdHosp,
               tumorRecordNumber,primarySite,dateOfDiagnosis,socialSecurityNumber,
               medicalRecordNumber,dateOfBirth,nameLast,nameFirst", dictfile="");
data abstractdata; set abstractdata;
    dxyear = substr(dateOfDiagnosis,1,4);
    accession_number = input(accessionNumberHosp, 9.0) ;
    rename npiReportingFacility=NPI patientSystemIdHosp=patsysid tumorRecordNumber=hosptrn
    primarySite=site socialSecurityNumber=ssn medicalRecordNumber=mrn
    dateOfBirth=dob nameLast=lname nameFirst=fname;
run;
```

SAS

File*Pro

Input | Filter | Recode | Output | **Output Options**

The following options apply to the specific output selected in the previous "Output" tab. The options will dynamically change when a different output is selected.

Select the fields that will be displayed in the table; for large data files it is recommended that you display the smallest number of fields possible.

Note that some fields are automatically calculated by the software; to see the list of all the calculated fields, type [calculated] in the table filter.

Available but not Displayed

- AFP Post-Orchiectomy Lab Value (#3805)
- AFP Post-Orchiectomy Range (#3806)
- AFP Pre-Orchiectomy Lab Value (#3807)
- AFP Pre-Orchiectomy Range (#3808)
- AFP Pretreatment Interpretation (#3809)
- AFP Pretreatment Lab Value (#3810)
- AJCC ID (#995)
- AJCC TNM Clin M (#1003)
- AJCC TNM Clin N (#1002)
- AJCC TNM Clin N Suffix (#1034)
- AJCC TNM Clin Stage Group (#1004)
- AJCC TNM Clin T (#1001)
- AJCC TNM Clin T Suffix (#1031)
- AJCC TNM Path M (#1013)
- AJCC TNM Path N (#1012)
- AJCC TNM Path N Suffix (#1035)
- AJCC TNM Path Stage Group (#1014)
- AJCC TNM Path T (#1011)
- AJCC TNM Path T Suffix (#1032)

Filter [ ] Reset

Move Left | Move Right | Move All Left | Move All Right | Move Up | Move Down | Move First | Move Last

Selected Fields (they will be displayed in this order)

- Line Number
- Record Type (#10)
- Patient ID Number (#20)
- NAACCR Record Version (#50)
- Addr at DX--State (#80)
- County at DX Reported (#90)
- County at DX Geocode 1970/80/90 (#94)
- County at DX Geocode2000 (#95)
- County at DX Geocode2010 (#96)
- Race 1 (#160)
- Race 2 (#161)
- Spanish/Hispanic Origin (#190)
- IHS Link (#192)
- Sex (#220)
- Age at Diagnosis (#230)
- Date of Birth (#240)
- Date of Birth Flag (#241)
- Birthplace--State (#252)
- Birthplace--Country (#254)

Filter [ ] Reset

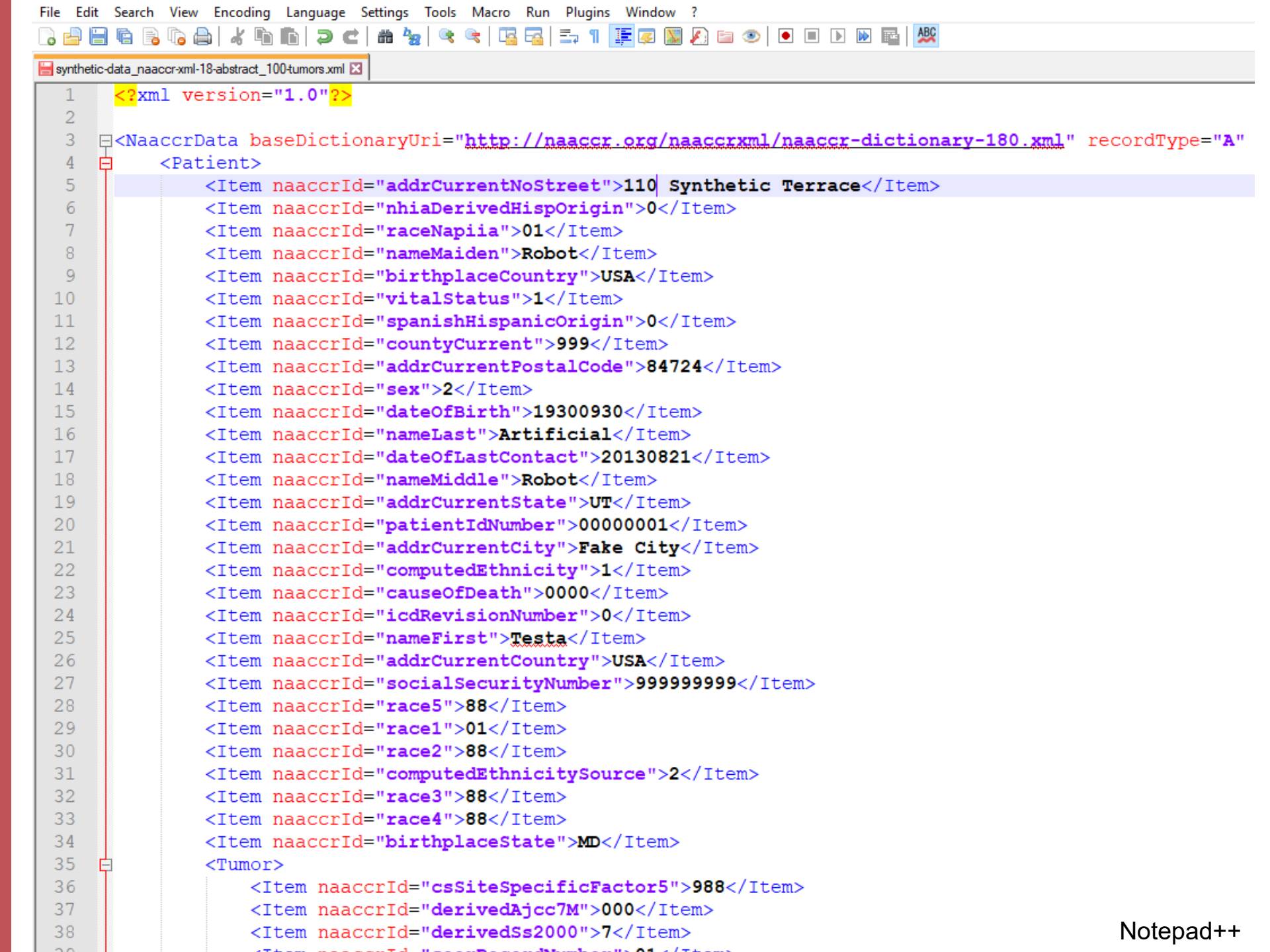
You can open a previously saved list of fields from the dropdown or load the fields from a file by using the Load button, and you can save the current selected fields.

Field Lists: NAACCR 2019 submission req fields | Load... | Save | Save As...

| | | |

Process: visually verify data in abstract (and now, review dictionaries)

Old Tool fixed-width	any text editor, GenEDITS Plus Data Display tab
New Tool XML	Notepad++, GenEDITS Plus Data Display tab, File*Pro, Chrome/Firefox


File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
synthetic-data_naaccr-xml-18-abstract_100-tumors.xml
<?xml version="1.0"?>
<NaaccrData baseDictionaryUri="http://naaccr.org/naaccrxml/naaccr-dictionary-180.xml" recordType="A"
<Patient>
<Item naaccrId="addrCurrentNoStreet">110 Synthetic Terrace</Item>
<Item naaccrId="nhiaDerivedHispOrigin">0</Item>
<Item naaccrId="raceNapiia">01</Item>
<Item naaccrId="nameMaiden">Robot</Item>
<Item naaccrId="birthplaceCountry">USA</Item>
<Item naaccrId="vitalStatus">1</Item>
<Item naaccrId="spanishHispanicOrigin">0</Item>
<Item naaccrId="countyCurrent">999</Item>
<Item naaccrId="addrCurrentPostalCode">84724</Item>
<Item naaccrId="sex">2</Item>
<Item naaccrId="dateOfBirth">19300930</Item>
<Item naaccrId="nameLast">Artificial</Item>
<Item naaccrId="dateOfLastContact">20130821</Item>
<Item naaccrId="nameMiddle">Robot</Item>
<Item naaccrId="addrCurrentState">UT</Item>
<Item naaccrId="patientIdNumber">00000001</Item>
<Item naaccrId="addrCurrentCity">Fake City</Item>
<Item naaccrId="computedEthnicity">1</Item>
<Item naaccrId="causeOfDeath">0000</Item>
<Item naaccrId="icdRevisionNumber">0</Item>
<Item naaccrId="nameFirst">Testa</Item>
<Item naaccrId="addrCurrentCountry">USA</Item>
<Item naaccrId="socialSecurityNumber">999999999</Item>
<Item naaccrId="race5">88</Item>
<Item naaccrId="race1">01</Item>
<Item naaccrId="race2">88</Item>
<Item naaccrId="computedEthnicitySource">2</Item>
<Item naaccrId="race3">88</Item>
<Item naaccrId="race4">88</Item>
<Item naaccrId="birthplaceState">MD</Item>
<Tumor>
<Item naaccrId="csSiteSpecificFactor5">988</Item>
<Item naaccrId="derivedAjcc7M">000</Item>
<Item naaccrId="derivedSs2000">7</Item>
Notepad++

State/Requestor Data Items

- IF a registry defines or collects its own data items, need user dictionary
  - Distribute to reporting facilities & their vendors, vendor of your registry database
- Required information to make dictionary:
  - NAACCR Name (HBOC--Genetic Counseling Referral)
  - NAACCR XML ID (hbocGeneticCounselingReferral)
  - NAACCR Number (9262)
  - Parent element (Tumor)
  - Length (1)
  - Data type (numeric)
  - V18 only: start column (3250)
  - One more…

State/Requestor Data Items

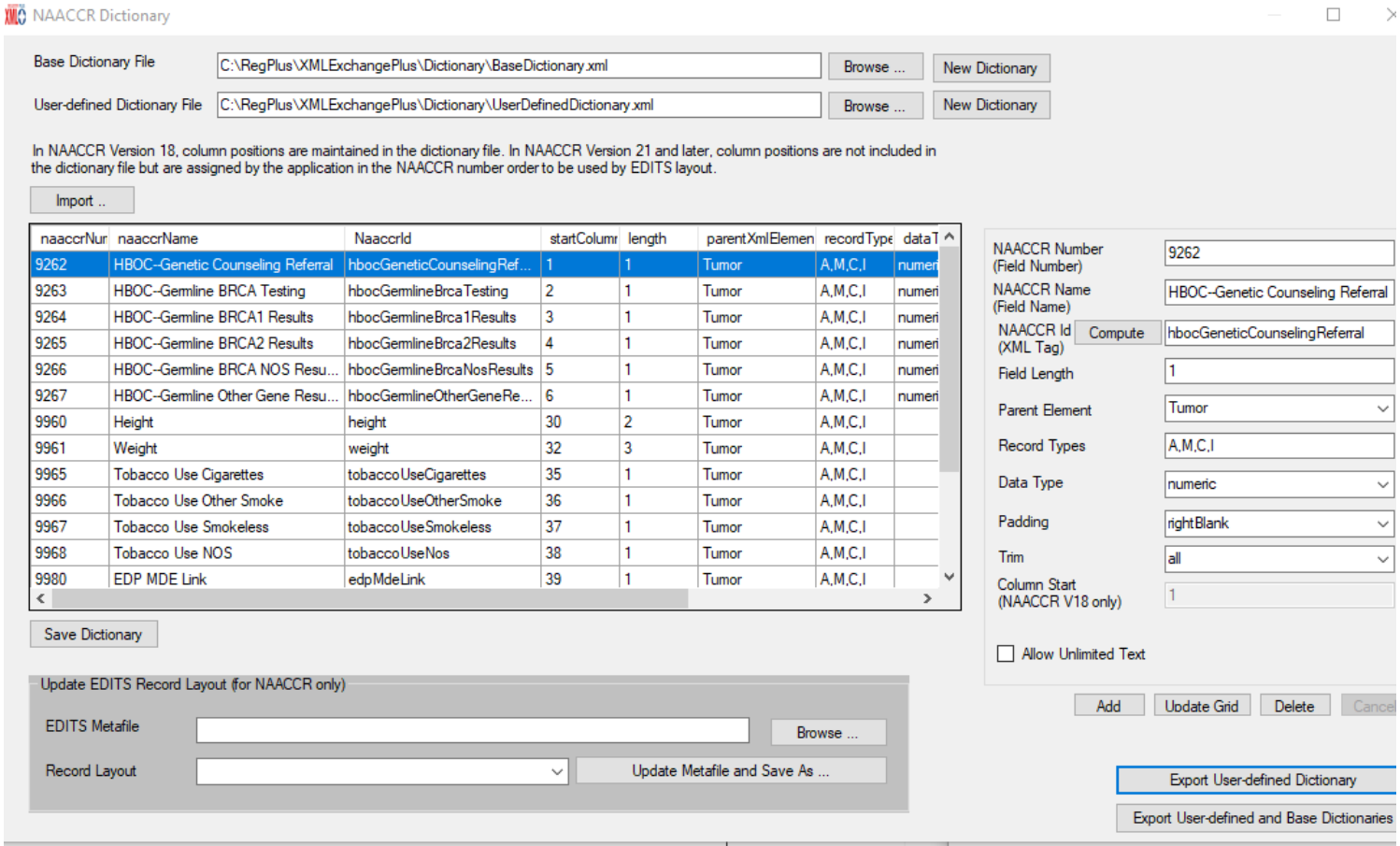
- URI
  - [custom URI]/[organization]-naaccr-dictionary[-xxx][-v#.#].xml
    - xxx is the corresponding NAACCR version, only required if user dictionary depends on a specific NAACCR version. v#.# is your organization's version of the dictionary
  - V18: http://uofuhealth.utah.edu/utah-cancer-registry/ucr-naaccr-dictionary-v180-v1.0.xml
    - File name: ucr-naaccr-dictionary-v180-v1.0.xml
  - V21: http://uofuhealth.utah.edu/utah-cancer-registry/ucr-naaccr-dictionary-v2.0.xml
    - File name: ucr-naaccr-dictionary-v2.0.xml

```
<?xml version="1.0"?>

<NaaccrData baseDictionaryUri="http://naaccr.org/naaccrxml/naaccr-dictionary-180.xml"
            userDictionaryUri="http://uofuhealth.utah.edu/utah-cancer-registry/ucr-naaccr-dictionary-180-v1.0.xml"
            recordType="A" timeGenerated="2020-06-25T15:16:27.8991903-06:00" specificationVersion="1.4"
            xmlns="http://naaccr.org/naaccrxml">
    <Patient>
        <Item naaccrId="addrCurrentNoStreet">110 Synthetic Terrace</Item>
        <Item naaccrId="nhiaDerivedHispOrigin">0</Item>
        <Item naaccrId="raceNapiia">01</Item>
```

State/Requestor Data Items

- XML Exchange Plus
- File*Pro
- NAACCR XML Utility



XML Exchange Plus

Compression

- Most software that handles NAACCR XML can read and write compressed XML files
- Smaller files to transfer faster
- .zip
- .xml.gz
  - 7-zip easy, free tool to extract or compress this format

Conclusion

- **Do** think about: registry processes, user dictionary
- Don't think about *(most people)*: XSDs, validation, extensions, libraries
- Resources & Tools
  - NAACCR Volume I, NAACCR 2021 Implementation Guidelines (coming soon)
  - Documentation & tools https://www.naaccr.org/xml-data-exchange-standard
  - Forum https://www.naaccr.org/forums/forum/naaccr-xml-standard/
  - File*Pro https://seer.cancer.gov/tools/filepro/
  - XML Exchange Plus https://www.cdc.gov/cancer/npcr/tools/registryplus/xml-exchange-plus.htm
  - Notepad++ https://notepad-plus-plus.org/
  - SAS macro, NAACCR XML Utility https://github.com/imsweb/naaccr-xml

Acknowledgements

- NAACCR XML Data Exchange Workgroup
- Utah Cancer Registry is supported by
  - –Surveillance, Epidemiology and End Results program (SEER)
  - –University of Utah
  - –National Program of Cancer Registries (NPCR)
  - –Huntsman Cancer Institute

Fabian Depry
Information Management Services, Inc.

NAACCR XML 2020 Webinar

File*Pro & NAACCR XML

A utility tool for the NAACCR XML Data Exchange Standard.

About NAACCR XML

- Replaces the NAACCR fixed-width format
- More complex to process than fixed-width, but has many other advantages
- Not a new standard; first version was released with NAACCR 14
- Website: https://www.naaccr.org/xml-data-exchange-standard/
- More Resources: https://github.com/imsweb/naaccr-xml/wiki

About File*Pro

- Free of charge (but you have to register with your email):

  https://seer.cancer.gov/tools/filepro/

- Not meant to be a “one-button-solution” but rather a flexible tool that can tackle many situations

- Support for NAACCR XML was added in January 2019 and is still being improved

- The “How To” feature from the help menu is a great way to learn the tool and the XML standard

Live Demo…

nax

A Command-Line Tool for NAACCR XML Processing

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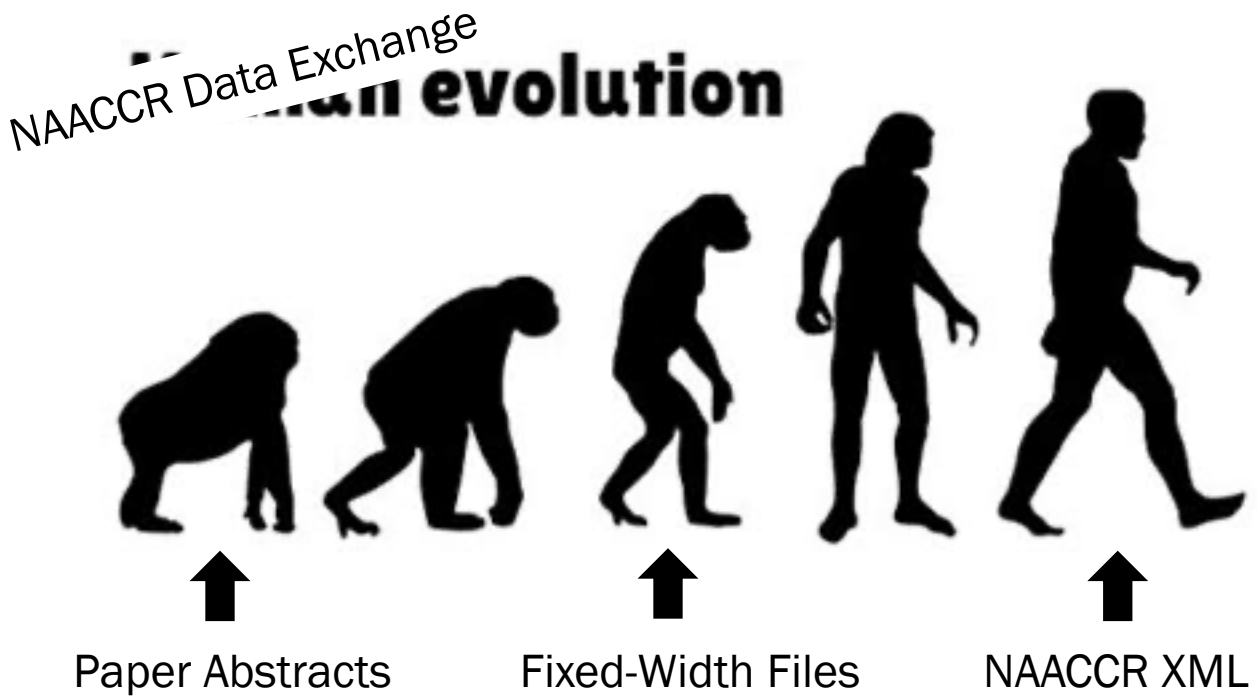
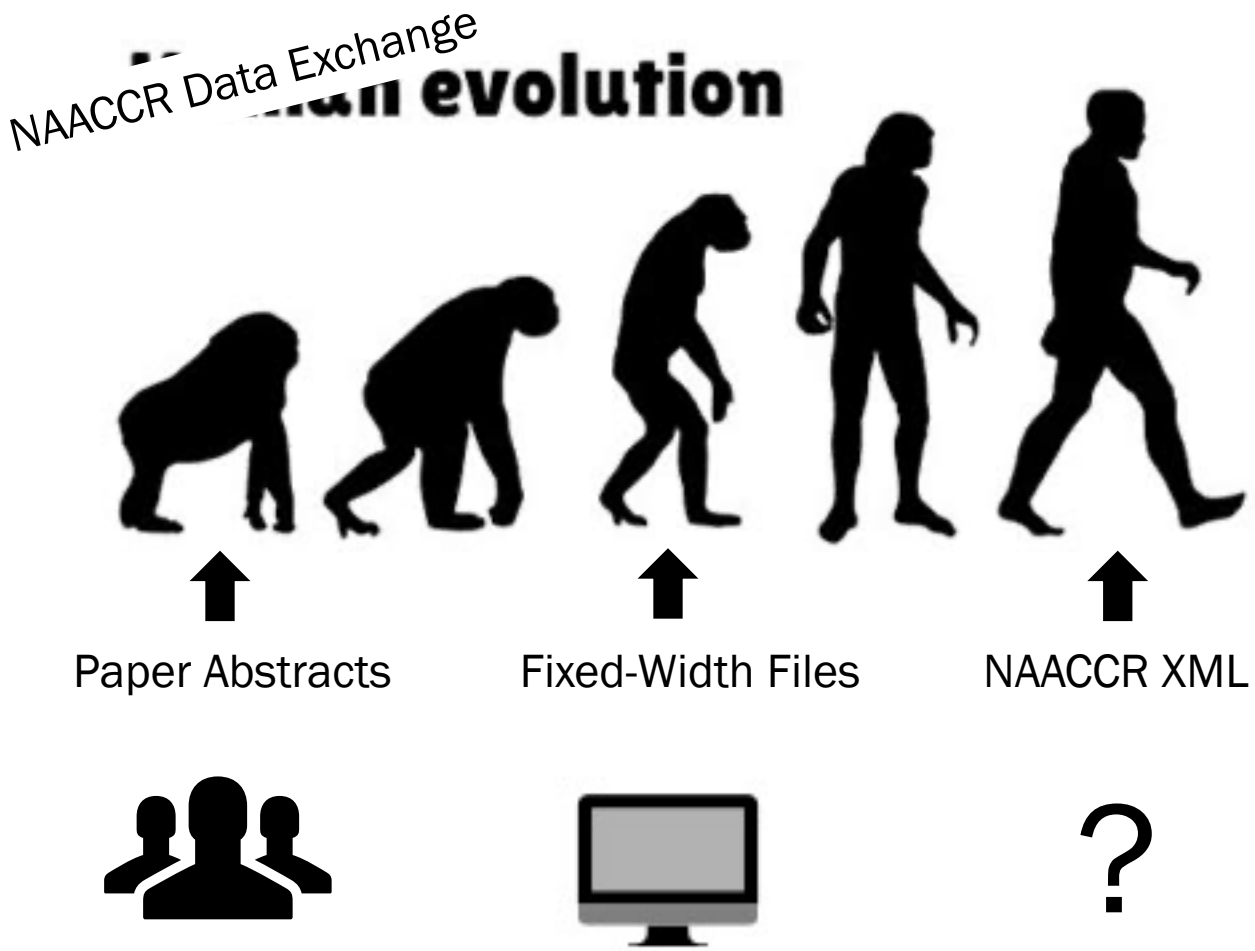
Lead Software Architect, Kentucky Cancer Registry (KCR)
Chair, NAACCR XML Workgroup
Representative-at-Large, NAACCR Board of Directors

The Road to NAACCR XML



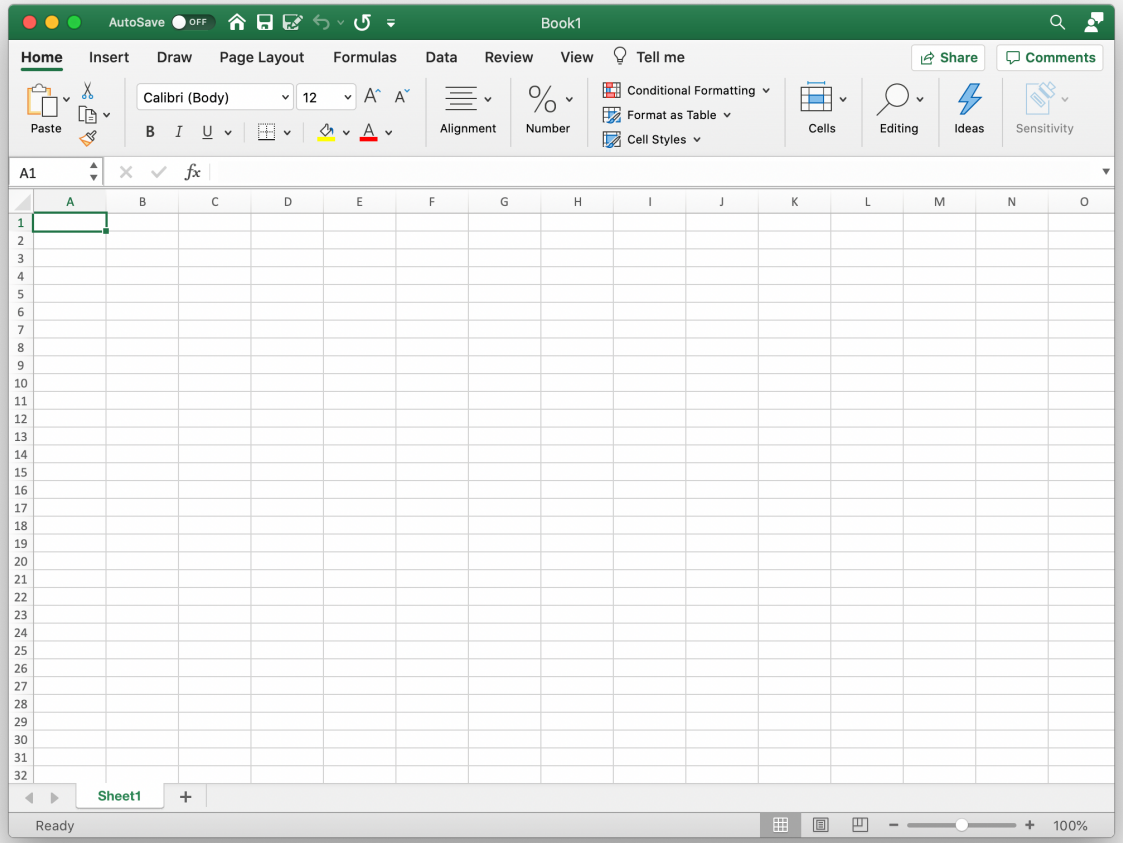
Processing NAACCR XML



Command-Line

```
naxtest — -zsh — 140×63
[isaac@edward naxtest % nax -h
usage: nax [OPTIONS] <Input File (.xml or .gz)>
 -con,--constant <arg>              Constant value to set for an Item,
                                    using the format: <naaccrId>=<value>.
                                    Any values from a CSV replacement file
                                    (rpl) take precedence over constant
                                    values. This parameter can be
                                    specified more than once.
 -del,--deleteOutputFiles <arg>     Criteria for deleting output files
                                    when they don't have enough data after
                                    all of the processing from nax,
                                    defaults to 0 (0=never delete,
                                    1=delete if no patients, 2=delete if
                                    no tumors)
 -e,--excludeItems <arg>            Comma-separated list of naaccrIds to
                                    exclude (ex.
                                    nameFirst,socialSecurityNumber).
                                    Included items take preference over
                                    this parameter.
 -h,--help                          Show help.
 -i,--includeItems <arg>            Comma-separated list of naaccrIds to
                                    include (ex.
                                    nameFirst,socialSecurityNumber). If
                                    this argument is specified, all other
                                    Items will be removed from output.
                                    Takes precedence over excluded items
                                    parameter.
 -l,--loglevel <arg>                Log level (default is INFO): ALL, OFF,
                                    CONFIG, FINE, FINER, FINEST, INFO,
                                    SEVERE, WARNING
 -met,--metrics <arg>               Level of metrics logging to output,
                                    defaults to 1 (0=none, 1=basic,
                                    2=extended)
 -ns,--includeNamespaces <arg>      Boolean value to include non-NAACCR
                                    namespaces, defaults to true unless
                                    includedItems is non-blank
 -o,--outputfile <arg>              Output file or directory
 -pre,--fileprefix <arg>            When the output file is a directory,
                                    prefix to append to output file names,
                                    empty by default
 -rep,--removeEmptyPatients <arg>   When a Patient has no Tumor records,
                                    boolean value to remove the empty
                                    Patient record, defaults to 'false'
 -rpl,--replace <arg>               CSV file with replacement values for
                                    Items, must have a header with:
                                    naaccrId, itemValue, newItemValue
 -s,--script <arg>                  File or inline groovy script to filter
                                    out elements or make changes to any
                                    Patients/Tumors/Item. This script will
                                    be called for all Patient, Tumor,
                                    Item, and other namespace elements, if
                                    the script returns false then the
                                    element is excluded from output. If
                                    the script returns true or does not
                                    have a return value, the element will
                                    be included in output. This parameter
                                    can be specified more than once.
 -sp,--scriptPatient <arg>          File or inline groovy script called on
                                    every Patient element that evaluates
                                    to false to exclude the patient from
                                    output.
 -st,--scriptTumor <arg>            File or inline groovy script called on
                                    every Tumor element that evaluates to
```

Graphical User Interface



	Command-Line	Graphical User Interface
Quick		
Easy to Reproduce and Document Complex Steps		
Easy to Automate		
Reduces Human Error		
Easy to Use		

nax

Command-Line Software for NAACCR XML Processing

- https://github.com/mccp-cri/nax
- Windows 10, macOS, Linux
- Open source
- Fully scriptable for automation
- Pretty fast (8000 tumor records/sec)
- Used internally at KCR
- Users can plugin their own custom processing logic using Groovy: http://www.groovy-lang.org/

Feature Highlights:

- Count patients, tumors, data items
- Get value distributions of data items
- Remove data items by name
- Extract patients and tumors based on custom logic
- Replace item values based on lookup tables or custom logic

Research Study:
Factors Associated with High Incidence of Pediatric Brain & CNS Tumors in Kentucky

Funded by The Kentucky Pediatric Cancer Research Trust Fund, Collaboration with Children's Hospital of Philadelphia (CHOP).

KCR sends tissue samples of Kentucky patients to CHOP for genomic sequencing, along with a NAACCR Abstract:

- Data must be in NAACCR XML Format
- Only Brain and CNS tumor data should be sent
- Remove all data items not specified in IRB protocol
- All dates must be replaced by "Days since Date of Birth"

nax Software Demo Part 1

Download and Install nax

1. Open URL: https://github.com/mccp-cri/nax
2. Go to releases, download latest release for your Operating System
3. Open zip file, unzip to Documents or another location
4. Open ‘naaccrxml-commandline’ folder and double-click ‘Launch_nax’

For help:

- View README on https://github.com/mccp-cri/nax
- Type ‘nax –h’ after double-clicking ’Launch_nax’
- Create new issue on https://github.com/MCCP-CRI/nax/issues

nax Software Demo Part 2

Show basic information about an XML file

1. Launch nax
2. Basic element counts
3. Value counts

-vc race1,sex

-vc dateOfDiagnosis="left(dateOfDiagnosis,4)"

-vc primarySite="left(primarySite,3)"

nax Software Demo Part 3

Filter Adolescent/Young Adult patients (ageAtDiagnosis <= 39) with breast cancer (primarySite=C50)

1. Filter out adults over 39

   -ft "tumor.getItemInt('ageAtDiagnosis') <= 39”

2. Filter out non-breast cancer tumors

   -ft "tumor.getItemValue('primarySite').startsWith('C50’)”

3. Remove empty patients

   -rep true

4. Output to file

   -o ayaBreast.xml.gz

nax Software Demo Part 4

Remove data items not requested, convert dates to days since date of birth

1. Display enhanced metrics for all Item counts

   -met 2

2. Run custom script to add new data items for “Days Since Date of Birth”

   -s convert_date_to_days.groovy

   dateOfDiagnosis => dateOfDiagnosisDays (dateOfDiagnosis – dateOfBirth)

   rxDateSurgery => rxDateSurgeryDays (rxDateSurgery – dateOfBirth)

3. Specify included item list

   -i 10,20,40,50,60,80,82,83,84,95,96,97,150,160,190,191,220,341,345,346,360,390,400,410,440…

4. Specify User Dictionary

   -usr pcrtf-naaccr-dictionary-180-v1.xml

Thank You

isaac.hands@uky.edu

CDC/NPCR XML Exchange Plus

Michelle Esterly
Sanjeev Baral

Katmai Government Services
Contractors to National Program of Cancer Registries
Division of Cancer Prevention and Control
Centers for Disease Control and Prevention

Joseph Rogers, Team Lead, Applications, Statistics, and Informatics Support Team Cancer Surveillance Branch, DCPC, NCCDPHP, CDC

NAACCR XML Webinar
July 22. 2020

Agenda

- CDC/NPCR XMLExchange Plus
- XMLExchange Plus Features
  - New Features for Viewing, Updating, Exporting
- Record Layout for NAACCR v21 Edit Metafile
- Future Plans

CDC/NPCR XML Exchange Plus

- Tool for working with NAACCR data exchange files formatted according to the NAACCR XML Data Exchange Standard
- Release Date: March 2020
- Revised: July 2020
- XML Exchange Plus Manual

XML Exchange Plus - 2.0.0.0

XML Exchange Plus

Use this tool to convert between different file formats, run data validation on NAACCR XML files against NAACCR dictionary and Schema Definition, run data validation using EDITS, and maintain NAACCR base and user-defined dictionaries.

Following file conversions are supported -

- Flat (fixed column positions) to NAACCR XML
- NAACCR XML to Flat (fixed column positions)
- NAACCR XML to Delimited

Hover mouse over buttons on the left to show supported functions.

Run EDIT

Import, view, update and export NAACCR Data

CDC/NPCR XML Exchange Plus Features

Conversion

- Converts NAACCR XML to flat files and vice versa
- Flat files can be column, character, or tab delimited

Dictionary Maintenance

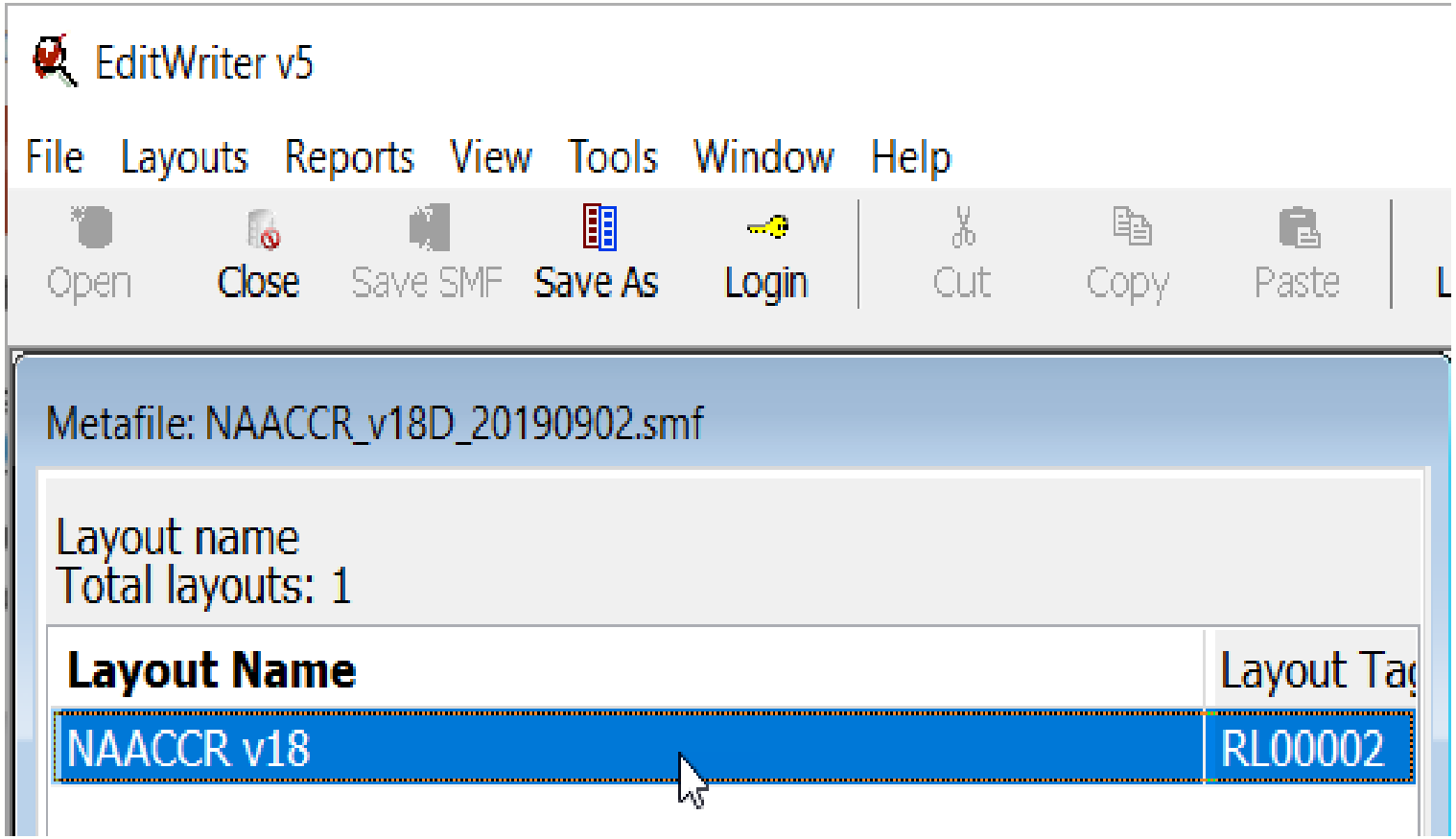
- Produces valid XML dictionaries to include customized user-defined items
- Ability to export dictionaries (user-defined only or both base and user)
- Addresses data items not defined in NAACCR Volume II and not included in the NAACCR Base Dictionary

Run EDITS

- Runs EDITS against NAACCR XML data files
- Produces detail and summary edit reports

NAACCR v21 Edit Metafile

- NAACCR v21 Edit Metafile will contain a record layout created from XML Exchange Plus
- Registries with Customized Edit Metafiles and Fields will add them to the bottom of the layout
- Instructions for customized edit metafiles will be provided.



NAACCR XML and Edit Meta Files

Edit Metafile Layout in EditWriter 5 and XML Dictionary Layout must match

- Exported Dictionaries from XML Exchange Plus can assist

Sample User Dictionary:

	A	B	C	D	E	F	G	H	I	J
1	naaccrNum	naaccrName	naaccrId	columnSt	length	parentXmlI	recordType	dataType	padding	trim
2	9500	XX Test Item 1	xxTestItem1	20456	4	Tumor	A,M,C,I	mixed	rightBlank	
3	9960	Height	height	20433	2	Tumor	A,M,C,I			
4	9961	Weight	weight	20435	3	Tumor	A,M,C,I			
5	9965	Tobacco Use Cigarettes	Tobacco Use Cigarettes	20438	1	Tumor	A,M,C,I			
6	9966	Tobacco Use Other Smoke	Tobacco Use Other Smoke	20439	1	Tumor	A,M,C,I			
7	9967	Tobacco Use Smokeless	Tobacco Use Smokeless	20440	1	Tumor	A,M,C,I			
8	9968	Tobacco Use NOS	localItem2	20441	1	Tumor	A,M,C,I			
9	9980	EDP MDE Link	EDP MDE Link	20442	1	Tumor	A,M,C,I			
10	9981	EDP MDE Link Date	EDP MDE Link Date	20443	8	Tumor	A,M,C,I			
11	9990	IHS Purchased/Referred Care	IHS Purchased/Referred Care	20451	1	Tumor	A,M,C,I			
12	9991	Urban Indian Health Organizat	Urban Indian Health Organizat	20452	1	Tumor	A,M,C,I			
13	9992	Urban Indian Health Organizat	Urban Indian Health Organizat	20453	2	Tumor	A,M,C,I			
14	12010	ECC Flag	eCCFlag	20455	1	Tumor	A,M,C,I			

CDC/NPCR XML Exchange Plus Features cont.

Viewer Capability

- Import and view a data source

Filter by Criteria

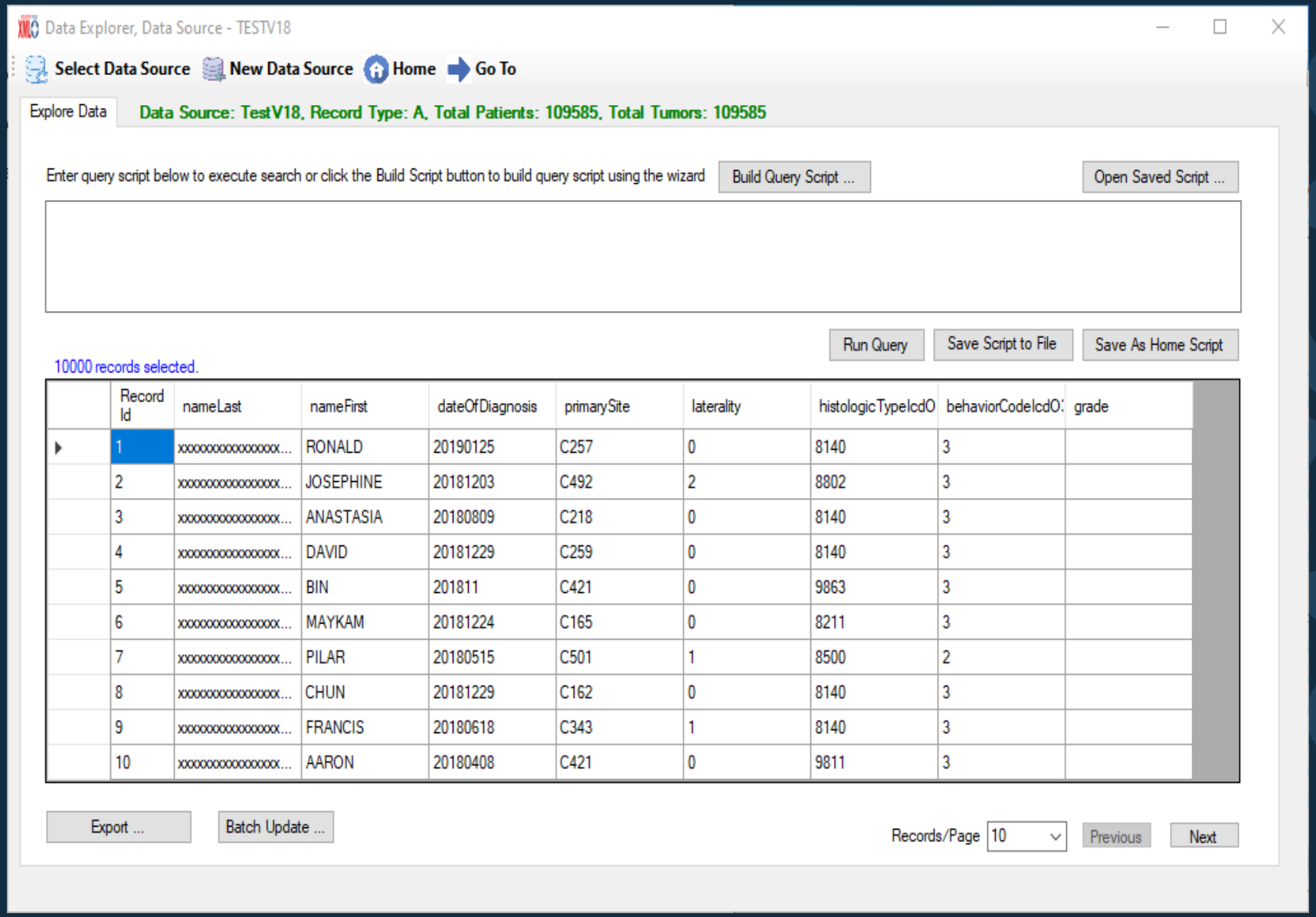
- Filter criteria applies to view

Update Data

- Update individual fields in NAACCR files
- Batch update NAACCR files and save update statements

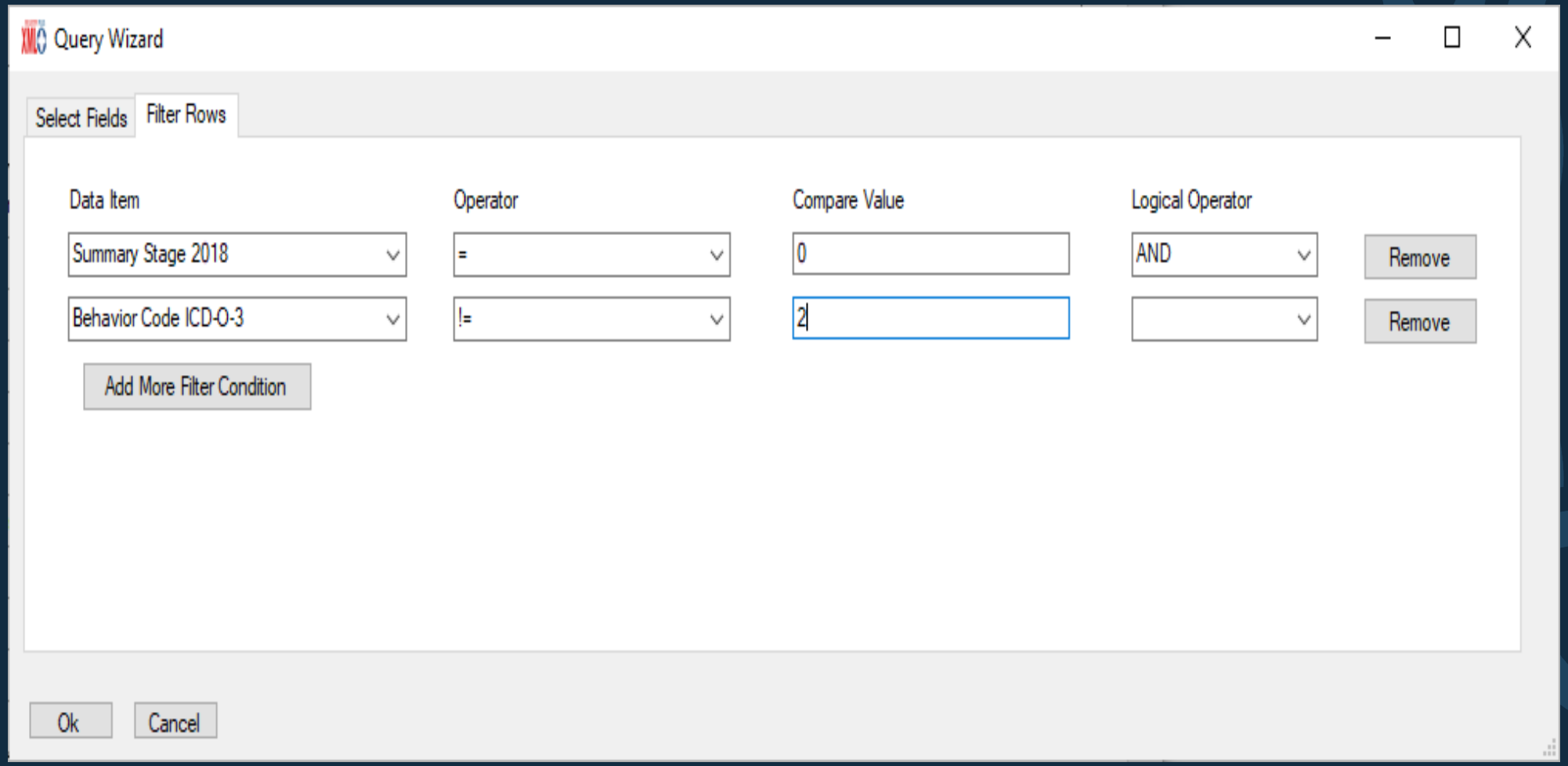
Export Updated and/or Filtered Data

Data Explorer

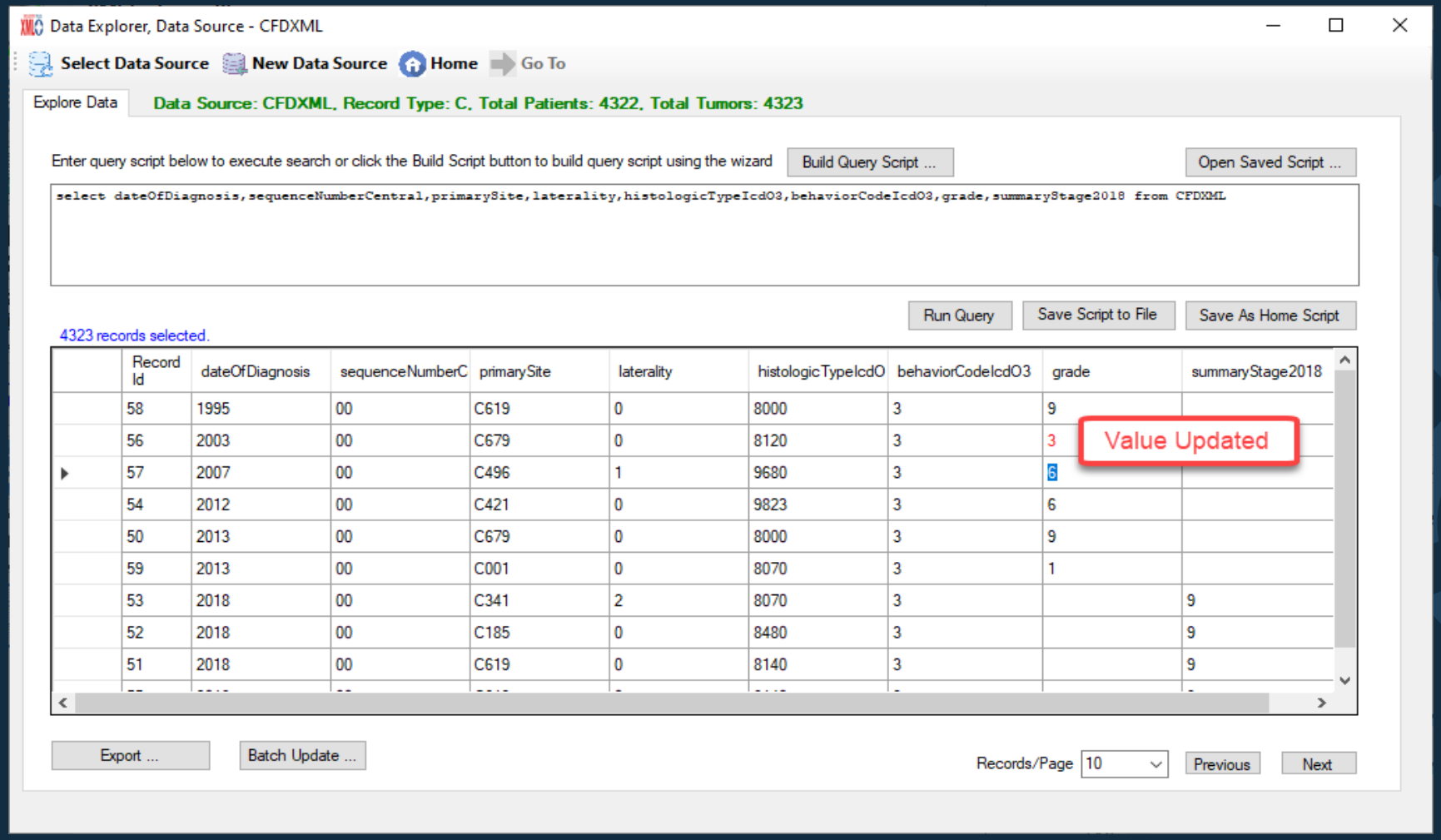


Record Id	nameLast	nameFirst	dateOfDiagnosis	primarySite	laterality	histologicTypeIcdO	behaviorCodeIcdO	grade
1	xxxxxxxxxxxxxxx...	RONALD	20190125	C257	0	8140	3	
2	xxxxxxxxxxxxxxx...	JOSEPHINE	20181203	C492	2	8802	3	
3	xxxxxxxxxxxxxxx...	ANASTASIA	20180809	C218	0	8140	3	
4	xxxxxxxxxxxxxxx...	DAVID	20181229	C259	0	8140	3	
5	xxxxxxxxxxxxxxx...	BIN	201811	C421	0	9863	3	
6	xxxxxxxxxxxxxxx...	MAYKAM	20181224	C165	0	8211	3	
7	xxxxxxxxxxxxxxx...	PILAR	20180515	C501	1	8500	2	
8	xxxxxxxxxxxxxxx...	CHUN	20181229	C162	0	8140	3	
9	xxxxxxxxxxxxxxx...	FRANCIS	20180618	C343	1	8140	3	
10	xxxxxxxxxxxxxxx...	AARON	20180408	C421	0	9811	3	

Query Wizard

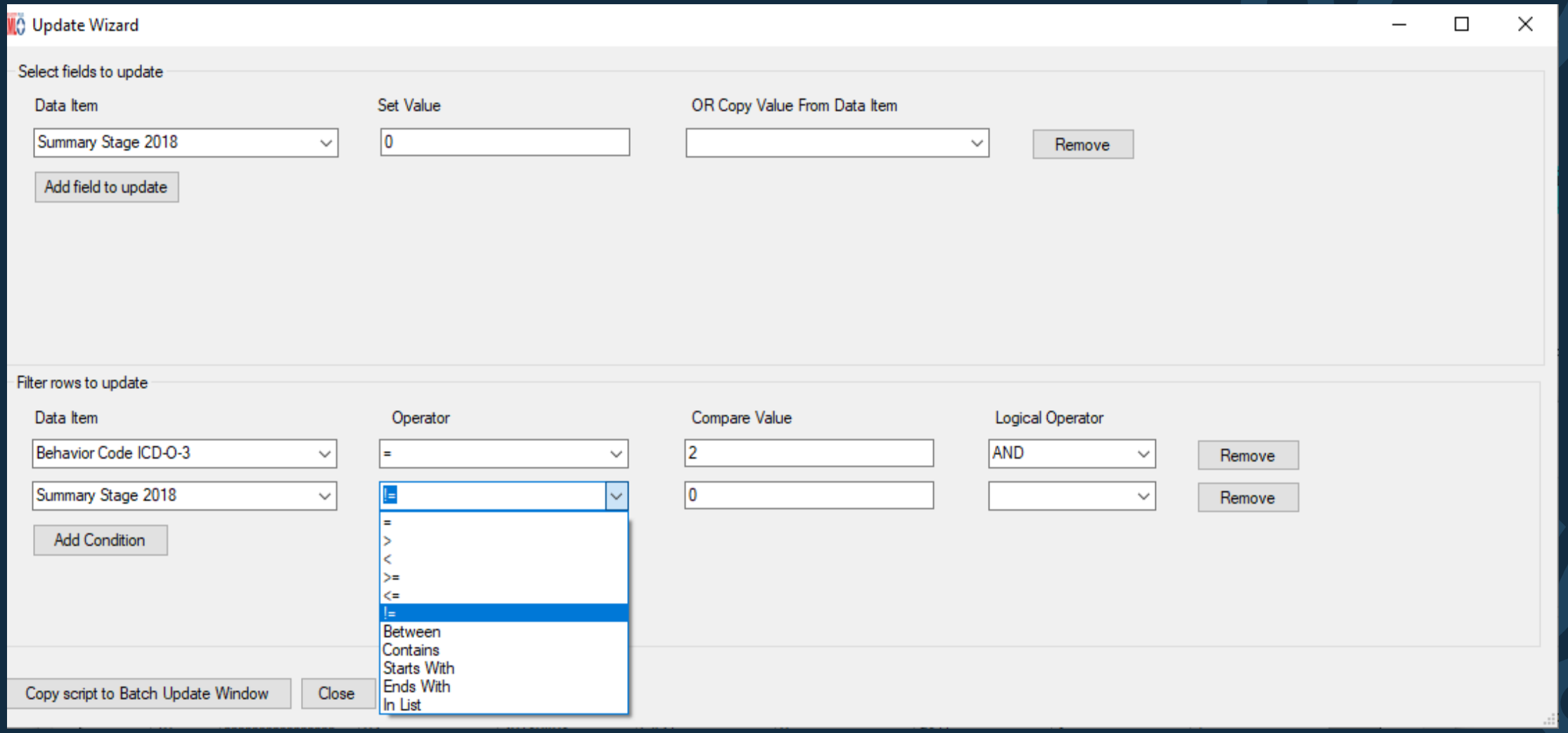


Data Explorer

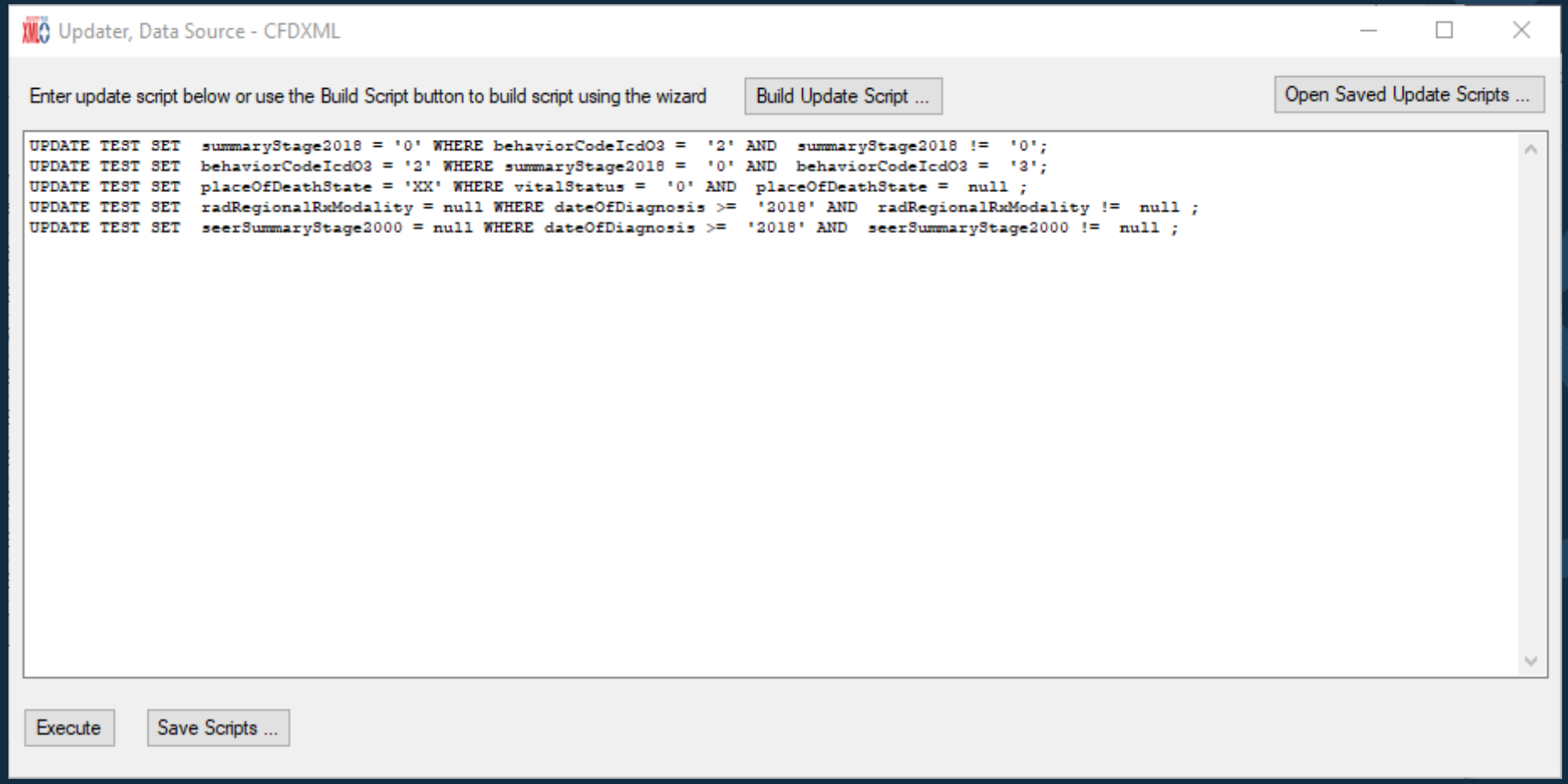


Record Id	dateOfDiagnosis	sequenceNumberC	primarySite	laterality	histologicTypeIcdO	behaviorCodeIcdO3	grade	summaryStage2018
58	1995	00	C619	0	8000	3	9	
56	2003	00	C679	0	8120	3	3	
57	2007	00	C496	1	9680	3	6	
54	2012	00	C421	0	9823	3	6	
50	2013	00	C679	0	8000	3	9	
59	2013	00	C001	0	8070	3	1	
53	2018	00	C341	2	8070	3		9
52	2018	00	C185	0	8480	3		9
51	2018	00	C619	0	8140	3		9

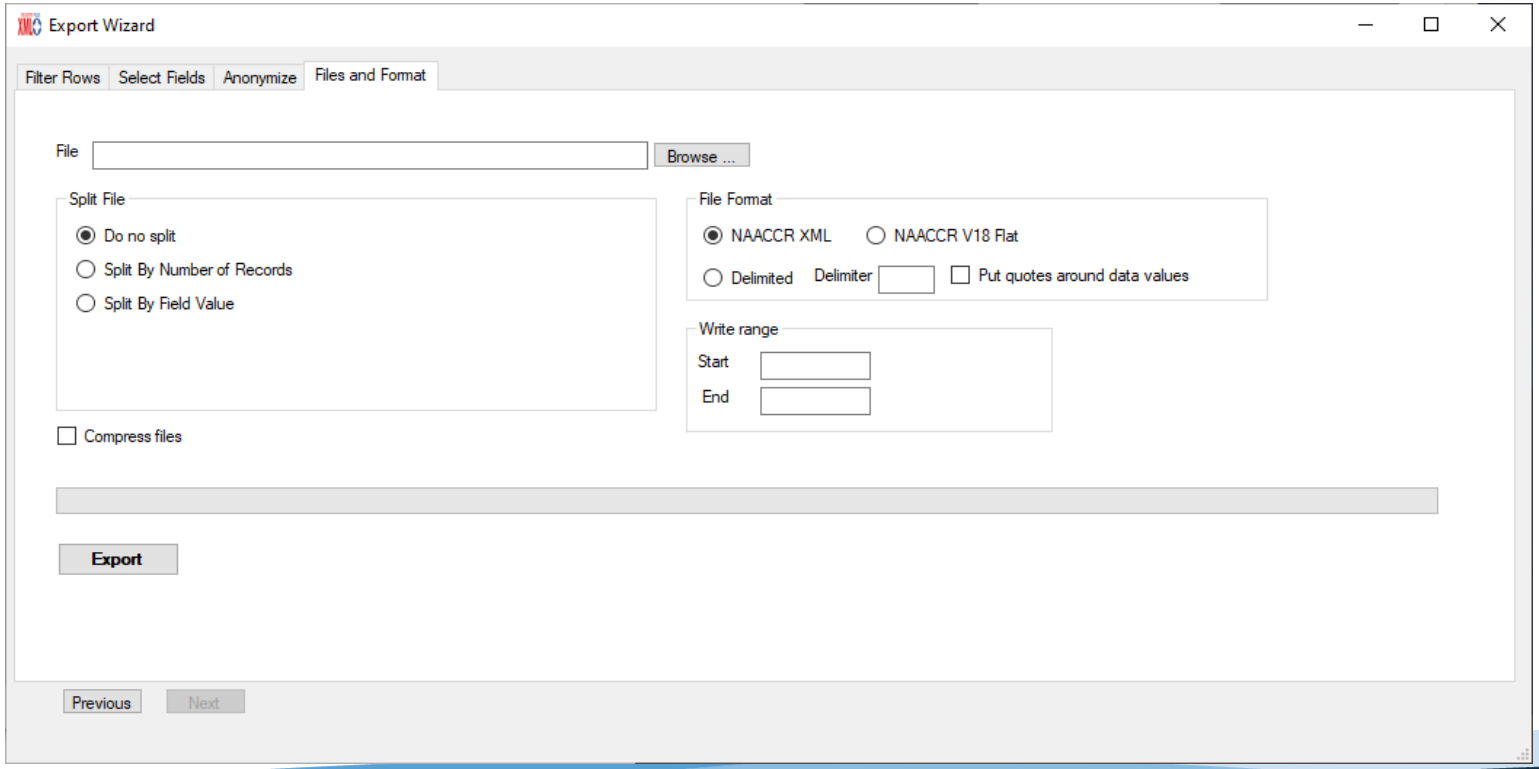
Update Wizard



Sample Update Scripts



XML Exchange Plus Export Features



- Add Filter Conditions
- Select Fields for output
- Anonymize (helpful to share files with vendors)
- Split Files
  - Number of Records
  - Field Values
- File Format
  - NAACCR XML
  - NAACCR V18 Flat
  - Delimited

Future Plans

- Assist in generating the record layout using XMLExchange Plus for the NAACCR v21 Edit Metafile/Training
- XMLExchange Plus Recorded Webinar
- Future XMLExchange Plus Enhancements
  - Validation

Thank you!

Go to the official federal source of cancer prevention information:

www.cdc.gov/cancer

For questions regarding XMLExchange Plus contact: cancerinformatics@cdc.gov

Cancer Prevention Works

Division of Cancer Prevention and Control

Reliable. Trusted. Scientific.

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

NAACCR XML Workgroup Resource

- Timeline for User Dictionaries
- NAACCR User Dictionary Clearinghouse – Coming Soon

	A	B	C	D	E	F	G	H	I	J	K
1	URI: http://uofuhealth.utah.edu/			URI: http://uofuhealth.utah.edu/utah-cancer-registry/ucr-dictionary-2.xml							
2	Description: Utah Hereditary Breast and Ovarian Cancer Syndrome (HBOC) State-Specific Data Item Dictionary										
3	Date Item Introduced	Date Item Last Updated	Retired Date	NAACCRID	Utah Item Name	Number	Length	Level	Record Types	Codes and description	Utah Required Status from Reporting Facilities
4	9/13/2018	9/23/2019		hbocGeneticCounselingReferral	HBOC--Genetic Counseling Referral	2222	1	Tumor	A, M, C, I	0 Referred to genetic counseling, but declined 1 Referred to genetic counseling 6 Referral not recommended 9 Unknown or no information	Required for eligible[b] cases diagnosed 1/1/2019 and forward, all facilities
5	9/13/2018	9/23/2019		hbocGermlineBrcaTesting	HBOC--Germline BRCA Testing	2223	1	Tumor	A, M, C, I	0 Genetic testing recommended, but patient declined 1 BRCA test was done 6 BRCA testing not recommended 7 BRCA test was ordered, but results not in medical record 9 Unknown or no information	Required for eligible[b] cases diagnosed 1/1/2019 and forward, all facilities
6	9/13/2018	9/23/2019		hbocGermlineBrca1Results	HBOC--Germline BRCA1 Results	2224	1	Tumor	A, M, C, I	0 Negative or normal 1 Positive for a pathogenic mutation 3 Variant of unknown significance (VUS) 9 Unknown, no information, or no BRCA1 testing done	Required for eligible[b] cases diagnosed 1/1/2019 and forward, all facilities
7	9/13/2018	9/23/2019		hbocGermlineBrca2Results	HBOC--Germline BRCA2 Results	2225	1	Tumor	A, M, C, I	0 Negative or normal 1 Positive for a pathogenic mutation 3 Variant of unknown significance (VUS) 9 Unknown, no information, or no BRCA2 testing done	Required for eligible[b] cases diagnosed 1/1/2019 and forward, all facilities
8	9/13/2018	9/23/2019		hbocGermlineBrcaNosResults	HBOC--Germline BRCA NOS Results	2226	1	Tumor	A, M, C, I	0 Negative or normal 1 Positive for a pathogenic mutation 3 Variant of unknown significance (VUS) 8 Not applicable, BRCA1 and/or 2 results specified 9 Unknown, no information, or no BRCA testing done	Required for eligible[b] cases diagnosed 1/1/2019 and forward, all facilities
9	9/13/2018	9/23/2019		hbocGermlineOtherGeneResults	HBOC--Germline Other Gene Results, Not BRCA	2227	1	Tumor	A, M, C, I	0 Negative, normal, or variants of unknown significance (VUS) 1 Positive for pathogenic mutation(s) 9 Unknown, no information, or no other gene results	Required for eligible[b] cases diagnosed 1/1/2019 and forward, all facilities

Benefits

User-defined codes and descriptions

Maintenance of user-specific requirements

Share with vendors and reporting sources

Resource for registries

Additional details and instructions will be released soon!

Questions?

Thank you

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