




I.T. Worked for Me: In "FUN" matics in the Cancer Registry

RONDA BROOME, CTR
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KELLY MERRIMAN, CTR

7/13/23



Q&A

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

If you have participants watching this webinar at your site, please collect their names and emails.

We will be distributing a Q&A document in about one week. This document will fully answer questions asked during the webinar and will contain any corrections that we may discover after the webinar.

Fabulous Prizes



Guest Presenter



- Lisa Landvogt, BA, CTR
 - Director of Cancer Data and Accreditation, Henry Ford Health
- Kelly Merriman, MPH, PhD, CTR
 - Director, Tumor Registry, MD Anderson
- Ronda Broome, MSHMI, MS CTR
 - Associate Director of Clinical Abstraction, Syapse

North American Association of Central Cancer Registries (NAACCR) Webinar Series July 13, 2023

Featuring: Lisa Landvogt, Kelly Merriman, and Ronda Broome



I N FUN MATICS

THE SEQUEL:

If You've Got "I.T."... Flaunt "I.T."



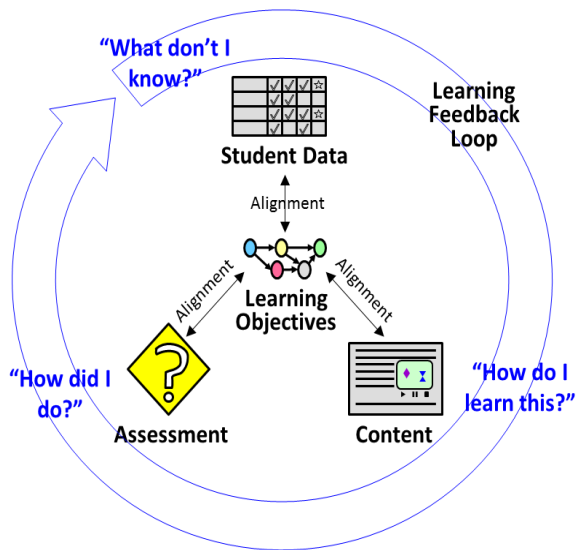
Takin' Care of Business

- **Disclosure on behalf of the three guest presenters**
 - None of us have any relevant financial or non-financial relationship in products or services we may describe, review, evaluate or compare during this presentation.



WORTHLESS STATEMENT

We come before you,
to stand behind you.
To tell you something we know nothing
about.
Next Thursday, the day after Friday,
there will be a ladies meeting for men only.
Please wear your best clothes if you have
any.
And if you can come, please stay home.
Admission is free, or you can pay at the
door
We'll give you a seat, so you can sit on the
floor



Webinar Learning Objectives

Describe how informatics can be leveraged by cancer registrars to capture essential cancer data

Describe the mixture of technology with data and utilizing the outcome to share relevant and valuable data analysis

Describe how the creative use of information technology (I.T.) can elevate and sustain the role of the certified tumor registrar (C.T.R.) into a level of scientific contributions to timely and quality-based cancer data collection and analysis for real world data use, while enjoying your career and having fun

Inquiring Minds Want To Know

• **Poll Questions (one at a time please)**

1. How would you classify your current status?
 1. Current Certified Tumor Registrar (CTR)
 2. CTR Eligible
 3. Other/Interested in the CTR profession but not yet eligible (still in school, exploring, undecided)

2. Are you currently part or full-time employed as a CTR or CTR eligible, if yes what type of facility employs you?
 1. Hospital/Health System/Clinic
 2. Outsourcing Cancer Registry Vendor (company or self employed)
 3. Cancer Registry Data Software Vendor
 4. Other/State/Central Registry/SEER/NIH/CDC etc.

3. Cancer Registry/Data Experience How much experience do you have that you would list on a resume?
 1. None
 2. 2 years or less
 3. More than 2 years and less than 5 years
 4. More than 5 year and less than 10 years
 5. More than 10 years and less than 20 years
 6. More than 20 years



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Inquiring Minds Want To Know, Part II

• **Poll Questions (one at a time please)**

1. Do you currently work remotely?
 1. No
 2. Yes
 3. Hybrid format

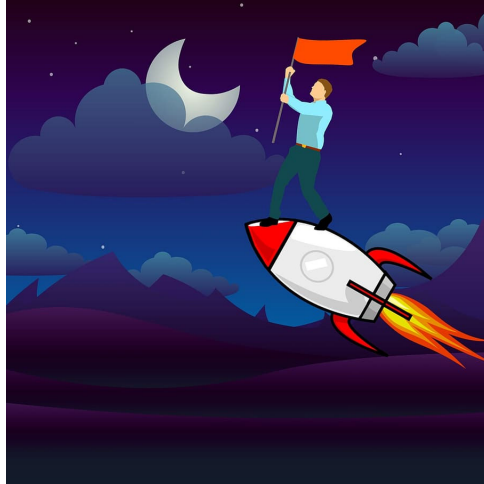
2. Are you interested in career development/growth opportunity as a CTR or soon to be CTR?
 1. Yes, definitely
 2. No, not really, I like what I do

3. Pretend you work full-time (multiply your hourly salary by 2080, that is your annual salary, select your category)
 1. Less than \$40,000
 2. \$40,001 through \$52,000
 3. \$52,001 through \$64,000
 4. \$64,001 through \$75,000
 5. More than \$75,001



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Evolution to Revolution – Fast Forward



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We Are On Our Own Moonshot Mission

- CTR's are more like EMT's (Substitute the acronym from Emergency Medical Technician to Expert Multi-Tasker)
 - It is a true talent and that needs to be recognized as a major component of a CTR's ability to flow with the many changes, responsibilities, and implementation of ensuring all the T's are crossed and the i's are dotted.
- Think about the term informatics and how it relates to the responsibilities of a CTR in 2023 (**STOP** looking back!)
- The **worst** statement an employee can utter is "but, that is how we always did it."



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A hand-drawn mind map with various notes and illustrations. At the top left, it says 'Self Empowerment.' and 'It's going in that DIRECTION.' Below this, 'OWN OUR OWN DATA' is written in red. Other notes include 'the Device is never connected to the Internet', 'Flip the System.', 'VOICE Conversation', 'things Emerge!', 'New life to the Human Operating System!', 'Need to Balance: spreadsheet + SOUL', 'Be Creative!', 'Your thought processes!', 'No One will look at them.', 'All your photos!', 'your wisdom keeper', 'the Device Records everything', and 'the Essence of your Experience'. There are also drawings of a laptop, a person, and a landscape with a sun.

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6.

Informatics Defined

- Cancer Informatics is the **intersection** of information science, computer science, medical oncology, communication, and health care.
- It deals with the **resources, devices, and methods required to optimize** the acquisition, storage, retrieval, and use of information in cancer.
- Applied cancer informatics turns clinical data into meaningful and useful information **to improve processes and outcomes in patient-focused and evidence-based cancer care**. Informally, cancer informatics supplies the right information, to the right people, in the right format at the right time.



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Four Pillars of Cancer Informatics

- Informatics Theory: Systems, Information Flow, and Knowledge Concepts
- Technology: Hardware and Software Tools in Support of Creating Data to Model Outcomes
- Biological Sciences: Life Science Disciplines, including Scientific Inquiry Principles
Cancer Informatics Resources
- Social Perspectives: Human-centered Interactions in an Organizational or Cultural Context



PILLARS



PILLOWS

NOT

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"POP" Quiz



4 E V E R
L O B O P A R T



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Moonshot Mission CTR v23 Details

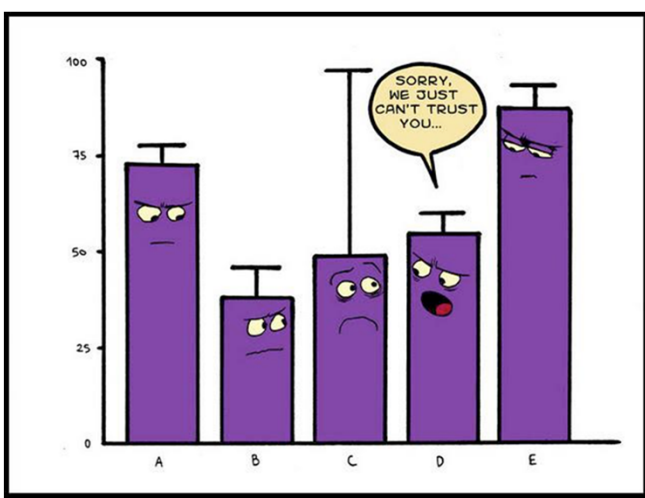
- Case Finding
- Abstracting
- Follow-up
- Quality Control/Peer Review
- Data Operations/Requests/Reports
- Staffing Management
- Accreditation(s)



Cancer Registry Data **MUST** be the source of truth

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Trust Your Instincts, Validate Your Hunches... The Truth is in the Data



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Intent - context of strategic, tactical, and operational decision management

Technology — priority focus on hardware, software, and services for economical supply of relevant Big Data and analytics

Big Data Analytics

Process — relevancy of Big Data and analytics to roles, responsibilities, and outcomes

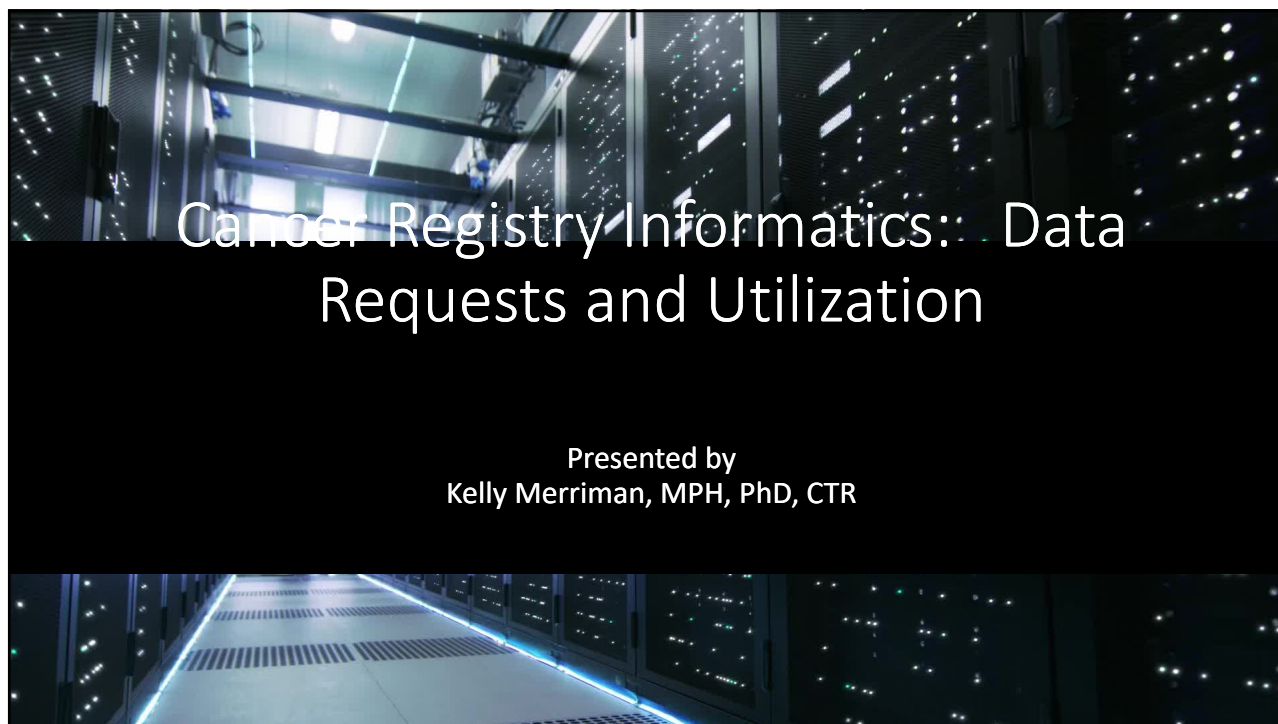
Data — governance and life-cycle management of voluminous, varied, and high-velocity data

People — alignment of organization and cultural norms with the use of Big Data and analytics

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Source of TRUTH

HENRY FORD HEALTH.



Cancer Registry Informatics: Data Requests and Utilization

Presented by
 Kelly Merriman, MPH, PhD, CTR

review articles

SPECIAL SERIES: CANCER CLASSIFICATION SYSTEMS

Evolution of the Cancer Registrar in the Era of Informatics

Kelly W. Merriman, MPH, PhD, CTR¹; Ronda G. Broome, MS, MSHMI, CTR²; Giordana De Las Pozas, MD¹; Lisa D. Landvogt, BA, CTR³; Ying Qi, MS, CTR⁴; and Judith Keating, CTR⁵



abstract

The cancer registrar reports accurate, complete, and timely abstracted cancer data to various healthcare agencies. The data are used for understanding the incidence of cancer, evaluating the effectiveness of public health efforts in the prevention of new cases and improving patient care outcomes and survival. There are increasing demands placed on registrars for additional data points with real-time submission to reporting agencies. To that end, registrars are increasing the use of informatics to meet the demand. The purpose of this article is the role of the registrar in the collection and reporting of critical cancer data and how registrars are currently using informatics to enhance their work. This article describes how informatics can be leveraged in the future and how registrars play a vital role in meeting the increasing demands placed on them to provide timely, meaningful, and accurate data for the cancer community.

JCO Clin Cancer Inform 5:272-278. © 2021 by American Society of Clinical Oncology

Value of Cancer Registry Data


- Our data captures a complete summary of a cancer patient's history, diagnosis, treatment and vital status
- Often considered the gold standard for cancer diagnosis and stage
- Vital status and Date of Last Contact/Death Date are critical data elements for survival analyses
- As a result our data is in high demand from a research perspective

Data Requests

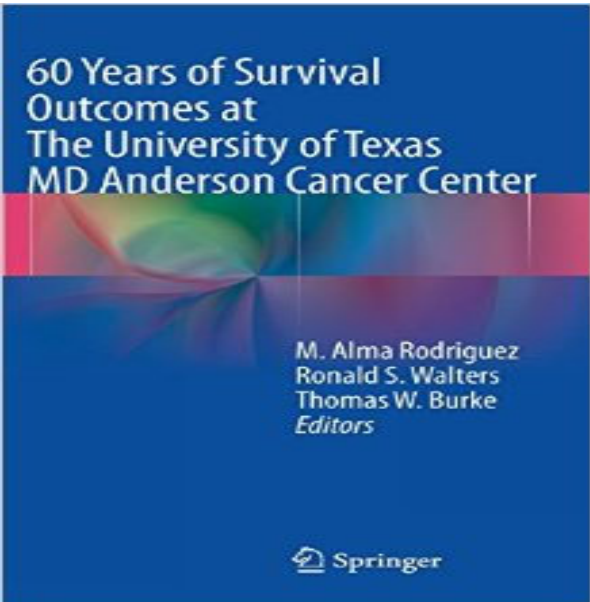
- We are often approached for data requests and/or presenting data to the Cancer Committee
- Requestor often does not know what they are asking or what is available
- Presents opportunities for collaboration




<https://unsplash.com/s/photos/collaboration>




Monograph – “60 Years of Survival Outcomes at the University of Texas MD Anderson Cancer Center”






Maria Alma Rodriguez



Eleanor MacDonald

Different Types of Data Requests

- Operational Requests involve questions about the operations of the hospital/business
- Generally at the aggregate level
- Examples:
 - How many new cancer patients presented at your facility last year
 - Of those, how many of these patients had treatment at your facility
 - Of those, how many were admitted into the hospital
- Quality Improvement – Improving a process or activity within your facility
- Preparatory to Research – may be conducted prior to or without IRB approval
- Research - Systematic investigation designed to develop or contribute to generalizable knowledge



Handling of Data Requests



Most data requests using Cancer Registry data are retrospective in nature



Since retrospective chart reviews generally involve a large number of records thus informed consent and authorization are not required



The investigator must obtain a waiver of authorization from the IRB, so still ask for IRB



Often times just Summary level data (Counts) are needed



Data does not contain any elements of PHI



Represents totals of de-identified patient data



Leverage commercialized cancer registry systems/reports

Tumor Registry Usage for Research

- Identify a cancer cohort of interest
- Case count for research grants
- Confirmed tumor disease and treatment information for a specific patient population or ingestion to a database/system
- Follow-Up/Survival information for patients in a departmental database or studies
- Matching for study populations



Data Request Examples for Ad-hoc Queries

- What are the top Histologies that metastasize to the brain
- Total number of cases of adenoid cystic carcinoma of the vulva we have treated (3 cases)
- Identify synchronous and multiple primary cancer patients
- Provide the top 5 cancers for various cities, states, countries over the last 5 years (Development Office, External Communications)
- Total number of breast cancer patients and who are pregnant (askMDAnderson)
- Match lung cancer cases with control group of bladder cancer, matching upon dx age, sex, and race
- Identify second primaries from breast cancer patients, now presenting with lung cancer with exposure to XRT controlling for timing of exposure

Utilizing Commercialized Tumor Registry Reports

Diagnosis by Gender - NCI Distribution*

University of Texas M.D. Anderson Cancer Center

#	Disease Site	Males	Females	Total
TOTALS		4394 (100.00%)	4918 (100.00%)	9312 (100.00%)
1	Lip, Oral Cavity / Pharynx	120 (2.73 %)	21 (0.43 %)	141 (1.51 %)
2	Esophagus	90 (2.05 %)	39 (0.77 %)	129 (1.37 %)
3	Stomach	21 (0.48 %)	20 (0.41 %)	41 (0.44 %)
4	Small Intestine	204 (4.64 %)	183 (3.72 %)	387 (4.14 %)
5	Colon	149 (3.35 %)	84 (1.71 %)	237 (2.54 %)
6	Rectum	11 (0.25 %)	31 (0.63 %)	42 (0.45 %)
7	Anus	50 (1.14 %)	23 (0.47 %)	73 (0.78 %)
8	Liver	141 (3.21 %)	104 (2.11 %)	245 (2.63 %)
9	Pancreas	37 (0.84 %)	10 (0.20 %)	47 (0.50 %)
10	Other Digestive Organ	385 (8.76 %)	196 (3.96 %)	581 (6.19 %)
11	Larynx	53 (1.21 %)	41 (0.83 %)	94 (1.01 %)
12	Lung	56 (1.27 %)	45 (0.92 %)	101 (1.08 %)
13	Other Respiratory	43 (0.98 %)	35 (0.71 %)	78 (0.84 %)
14	Blow and Joint	103 (2.34 %)	93 (1.89 %)	196 (2.10 %)
15	Soft Tissue	361 (8.22 %)	219 (4.45 %)	580 (6.23 %)
16	Melanoma - Skin	1 (0.02 %)	0 (0.00 %)	1 (0.01 %)
17	Kaposi Sarcoma	5 (0.11 %)	2 (0.04 %)	7 (0.08 %)
18	Mycotic Fungoides	37 (0.84 %)	53 (1.07 %)	90 (0.96 %)
19	Other Skin	0 (0.00 %)	2054 (41.76 %)	2054 (22.06 %)
20	Breast - Female	0 (0.00 %)	0 (0.00 %)	0 (0.00 %)
21	Breast - Male	0 (0.00 %)	109 (2.22 %)	109 (1.17 %)
22	Cervix	0 (0.00 %)	199 (4.05 %)	199 (2.14 %)
23	Corpus Uteri	0 (0.00 %)	148 (3.01 %)	148 (1.59 %)
24	Ovary	0 (0.00 %)	48 (0.98 %)	48 (0.52 %)
25	Other Female Genital	0 (0.00 %)	0 (0.00 %)	0 (0.00 %)
26	Prostate	917 (20.87 %)	0 (0.00 %)	917 (9.85 %)
27	Other Male Genital	41 (0.93 %)	0 (0.00 %)	41 (0.44 %)
28	Urinary Bladder	178 (4.05 %)	48 (0.98 %)	226 (2.43 %)
29	Kidney	193 (4.39 %)	81 (1.65 %)	274 (2.94 %)
30	Other Urinary	21 (0.48 %)	12 (0.24 %)	33 (0.35 %)
31	Eye and Orbit	14 (0.32 %)	16 (0.33 %)	30 (0.32 %)
32	Brain and Nervous System	99 (2.25 %)	84 (1.71 %)	183 (1.97 %)
33	Thyroid	77 (1.75 %)	124 (2.52 %)	201 (2.16 %)
34	Other Endocrine System	29 (0.66 %)	28 (0.57 %)	57 (0.61 %)
35	Non-Hodgkin Lymphoma	262 (5.96 %)	186 (3.78 %)	448 (4.81 %)
36	Hodgkin Lymphoma	41 (0.93 %)	41 (0.83 %)	82 (0.88 %)
37	Multiple Myeloma	68 (1.55 %)	52 (1.06 %)	120 (1.29 %)
38	Lymphoid Leukemia	47 (1.07 %)	24 (0.49 %)	71 (0.76 %)
39	Myeloid / Monocytic Leukemia	93 (2.12 %)	71 (1.43 %)	164 (1.76 %)
40	Leukemia - Other	5 (0.11 %)	5 (0.10 %)	10 (0.11 %)
41	Other Hematopoietic	34 (0.77 %)	18 (0.37 %)	52 (0.56 %)
42	Vulvovaginitis	31 (0.71 %)	21 (0.43 %)	52 (0.56 %)
43	Bl-Defiant Sites	2 (0.05 %)	0 (0.00 %)	2 (0.02 %)
44	Other	1 (0.02 %)	2 (0.04 %)	3 (0.03 %)
45	Benign Brain and CNS	22 (0.50 %)	42 (0.85 %)	64 (0.69 %)

Diagnosis by Gender - NCI Summary 3 Distribution - Business Rules

Percentages Are

This report provides total counts of diagnoses for each gender, grouped according to standards defined in the National Cancer Institute document "Exemplars for Standardized Cancer Summaries", Interim Revision, June 2020, updated 2011. Corrections have been made for certain obvious typographical errors in this document, specifically for skin malignancies (prevalence of contents of ICD-O-3, cells for Melanoma and Other Skin), Brain (addition of sites C70.2-C70.8), and "Other Female Genital" (inclusion of vaginal malignancies). In addition the NCI Classification has been augmented with the addition of a category for benign and borderline brain tumors.

Caution Instructions:
Case selection is totally at your discretion. The program will filter out any grossly inappropriate cases.

Critical Data Elements:
The following data errors or omissions will prevent a case from being considered in this report:
(1) missing or invalid Class of Case
(2) missing or invalid Site Code
(3) missing or invalid Histology Code
(4) Sex not specifically stated as (1) Male or (2) Female
A list of these excluded cases can be generated using the accompanying QA report.

Data Exclusion Rules:
In keeping with the NCI guidelines the report also excludes the following ("NCI Exclusions") unless otherwise requested:
(1) carcinoma in-situ of the cervix;
(2) intra-epithelial neoplasia;
(3) basal cell skin cancers;
(4) benign and borderline tumors other than "BR";
(5) cuspense cases that otherwise fit the criteria will be included.

Multi-Facility Handling:
Cases that are shared by more than one facility are counted just once.

Oncolog Demo for Survival Analyses

- From your Tumor Registry list 5-year Survival Rates for the most recent available ANALYTIC CASES treated at your institution. In the fifth column, enter the time frame of analysis (e.g. 2014-2018)

	Stage 1	Stage 2	Stage 3	Stage 4	Time Frame
Breast	97.0	91.4	78.9	45.5	2014 - 2018
Colon	91.2	90.7	82.9	31.4	2014 - 2018
Lung	73.0	55.1	37.4	14.0	2014 - 2018
Prostate	93.0	95.4	91.4	68.2	2014 - 2018

Survival

Configure Your Report

Data Sources

Saved Filter Result(s) Select one or more saved filter results files ("Gather files") for comparison on a single graph. Each filter result file will generate one survival curve and (optionally) one normal survival probability curve.

Cancer Conference Filter Create a filter 'on the fly' to select a single group of cases. Use the 'Separation Options' to create comparisons based on stage, treatment, etc.

Date and Failure Options

Date of Initial Diagnosis / Date of Last Follow-up

Cause Specific Survival Options Failure Options
 Vital Status Cancer Status 06 Dead - No Evidence Of This Cancer At Death
 Follow-up Status for Outcome Studies (Failure Options) 07 Dead - This Ca Present But Not Primary Cause
 08 Dead - This Cancer The Primary Cause
 10 Dead - Unknown If This Ca The Primary Cause

Custom Dates for Time-To-Event Studies

Select Start Date:

Select Event Date:

Reportable Data Summary

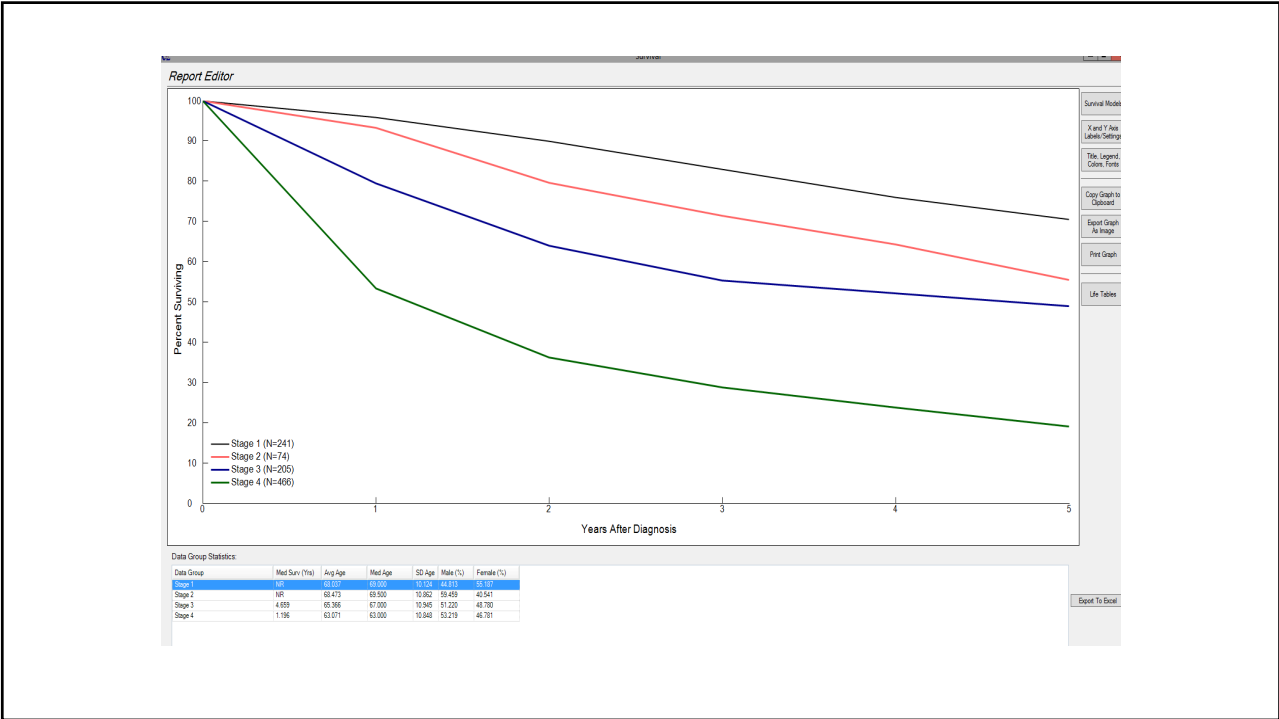
Group Name [Editable For Legend]	Cases	Show Survival?	Show NSP?
Stage 0	0	<input type="checkbox"/>	<input type="checkbox"/>
Stage 1	241	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stage 2	74	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stage 3	205	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stage 4	466	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stage Link	0	<input type="checkbox"/>	<input type="checkbox"/>
Insufficient Data	0	<input type="checkbox"/>	<input type="checkbox"/>

*NSP = Normal Survival Probability. Expected survival of a normal population matched to the study group for age, race, sex and year of diagnosis.

Separation Options

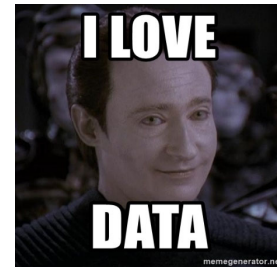
- All Data (No Separation)
- Age (<50, >= 50)
- Age (by decade: 30-39)
- Sex (M, F)
- Race (White, Black, etc...)
- Grade (1, 2, 3, 4, Other)
- Dominant Stage (0, 1, 2, 3, 4, Link)
- SEER Stage (0, 1, 2, 5, 7, Other)
- Surgical Procedure (None, Local, Sub-total, Total)
- Radiation (None, Treated)
- Chemotherapy (None, Treated)
- Hormone Therapy (None, Treated)
- Type of First Recurrence (None, In-situ, Local, Regional, Distant)

Buttons: [Exit] [Back] [Next >]




Data Analytics from a Registrar's Perspective

- Need a basic understanding of statistics and epidemiology to understand the cancer literature
- A cancer registrar's job is to provide the data for our researchers and our administrators, not to do the statistics for them
- Though, the registrar may often perform some basic summary level data for data requestors conducting research or operational purposes



Utilizing Tumor Registry Data for Survival Analyses


- Diagnosis Date, Site, Histology, Stage
- Vital Status and Date of Last Contact/Death Date for life
- Overall Survival – No restriction on cause of death
- Cancer Specific Survival – Cause of death specific to cancer studying
- Challenging fields – Recurrence, Disease Status, Cause of Death




THE UNIVERSITY OF TEXAS
MD Anderson
Cancer Center
Making Cancer History™

Types of Survival Analyses


Category	Pros	Cons
Univariate Analysis (Analysis of one variable at a time) e.g. Kaplan-Meier curve	Allows one to understand the distribution of values for one variable (how does diagnosis age impact survival) Provides an excellent graphic illustration of the difference between 2 groups	Wrong conclusions can be drawn if there is confounding e.g. early research concluded that heavy coffee drinking caused lung cancer, but it was really the fact that coffee drinkers were more likely to be smokers
Multivariate Analysis (Analysis of more than two variables at a time) e.g. Cox Proportional Hazards	Allows one to determine the empirical relationship between multiple variables simultaneously (how does diagnosis age and stage of cancer impact survival) Conclusions you draw from the analysis is more likely to be accurate	Requires more complex analyses Need greater sample size



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Highest Standards. Better Outcomes.*



CQIP
Cancer Quality Improvement Program




Commission on Cancer

CQIP

Cancer Quality Improvement Program

University of Texas M.D. Anderson Cancer Center

6741945
Houston, TX



NATIONAL
CANCER
DATABASE

Annual Report 2022

Updated August 2022

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Cancer Quality Improvement Program (CQIP)

- A data-driven, process and outcomes-based cancer quality improvement initiative
- Confidentially reports to 1,500 individual CoC-accredited hospitals their data as entered in NCDB (including comparisons with national data from all CoC-accredited programs)
- CQIP Slide Directory PDF located on the About CQIP tab provides information to support the reports, technical details, report creation, and scientific justification and references for quality measures
- 2022 release provides CoC-accredited facilities with data on:
 - Compliance with CoC-adopted quality measures
 - Volume data for complex surgical oncology operations with 30-day and 90-day mortality
 - Unadjusted and risk-adjusted survival data for selected cancer sites
 - Other clinical data and administrative data, which will be updated and expanded annually



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CQIP
Cancer Quality Improvement Program



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Final Thoughts on Leveraging Our Data

- Have confidence – we are the expert with important data to share
- We know our data better than anyone else does, so collaborate
- Can combine data from many sources –TR data not always sufficient
- Providing data is not sufficient to guarantee authorship – that is our job
- Must contribute more such as helping with the study concept, performing some data analysis, interpreting of the data and/or participating in the writing of the manuscript
- Ideas may originate from yourself or a researcher but you can improve their ideas
- If decide to publish in clinical journal always engage a clinician in that specialty

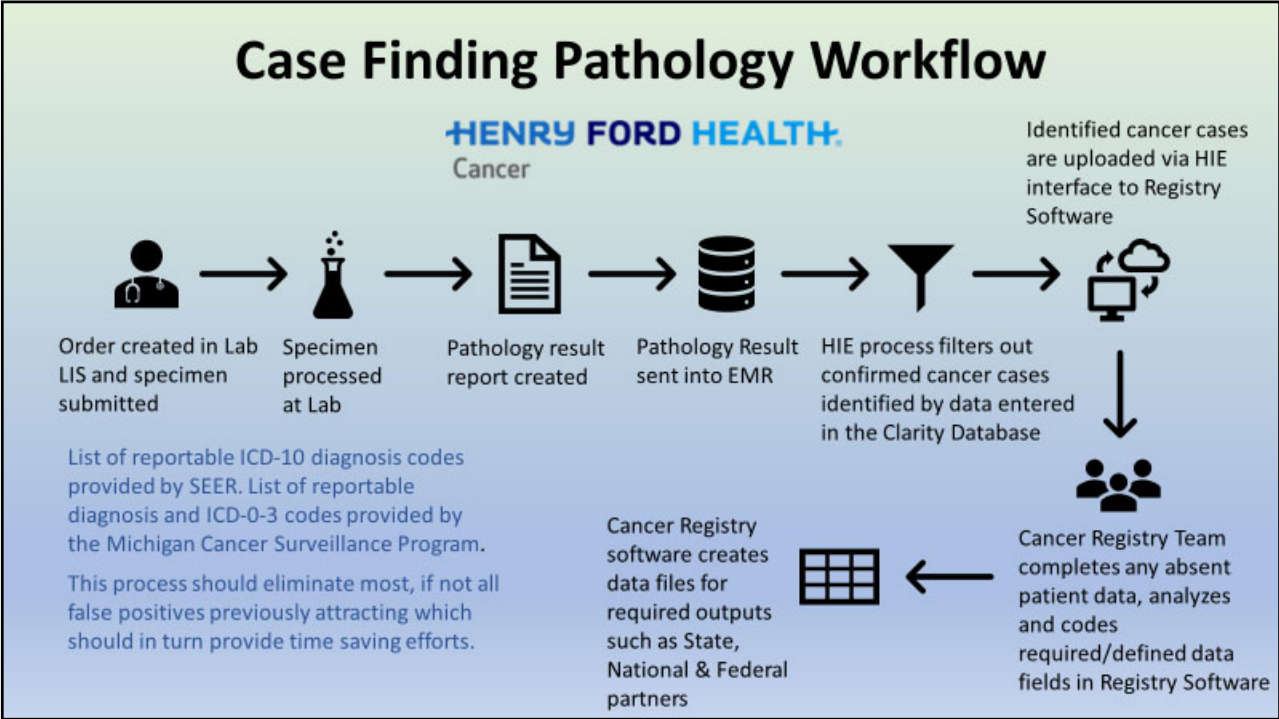
Final Thoughts on Leveraging Our Data

- Can often find a statistician/epidemiologist to do the analyses
- If not involved with any of the above be sure to ask them to acknowledge the registry that the data was retrieved from
- I use the following when I have only provided data For lectures or publications, please use the acknowledgment: “Patient population and various related data elements were identified and retrieved through a search of the Tumor Registry database maintained by the Department of Tumor Registry.”



Thanks!!!!

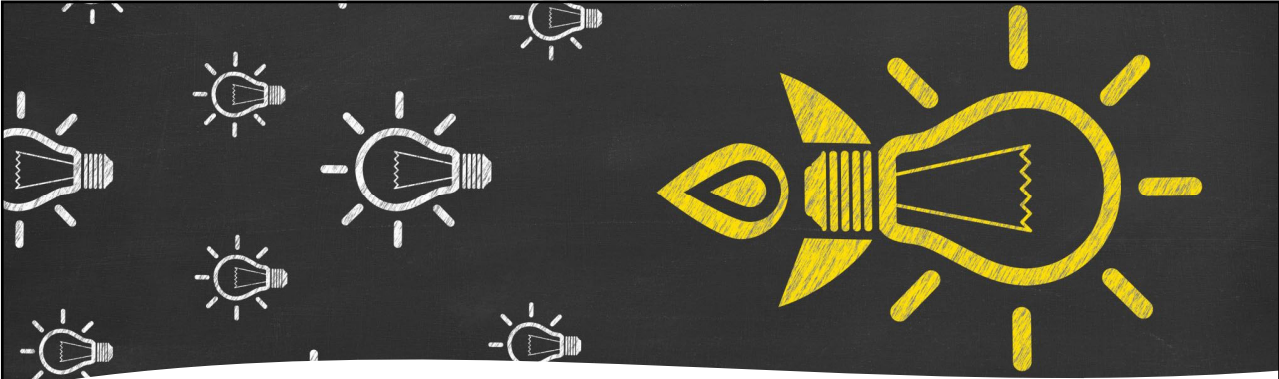




Thank You, Any Questions?

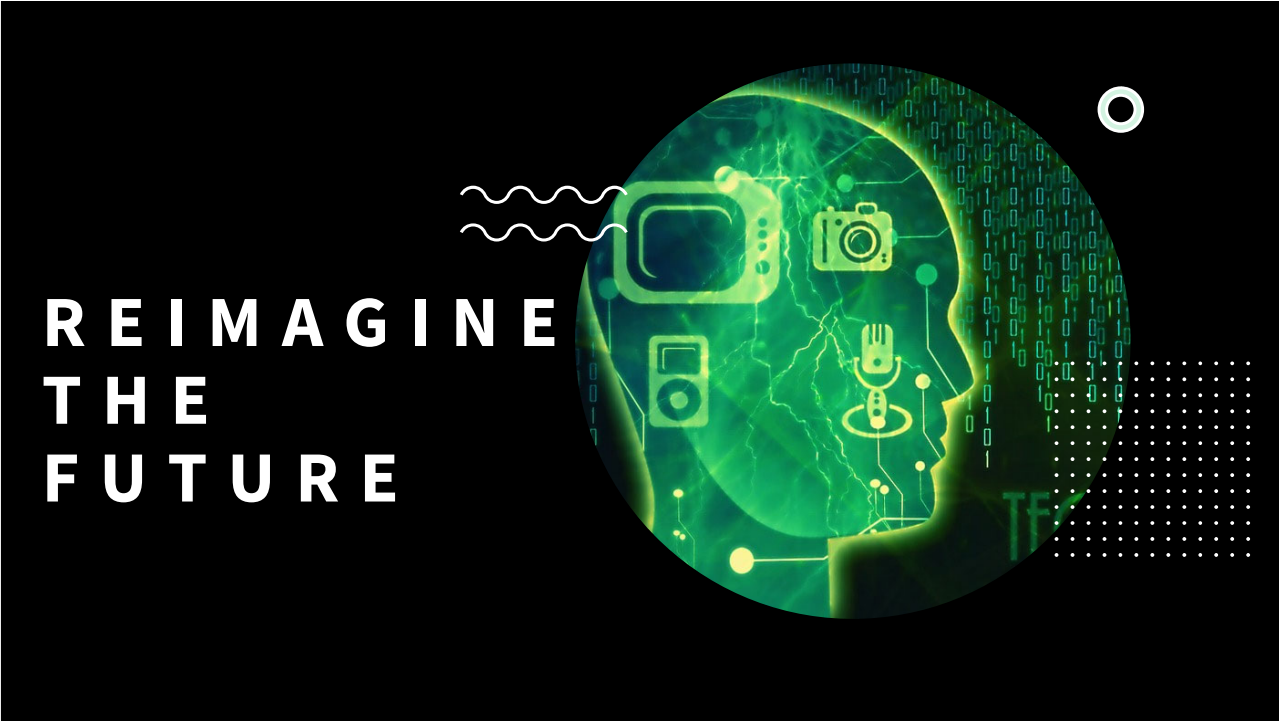
Contact: Lisa Landvogt
LLandvo1@hfhs.org
(708) 653-6403

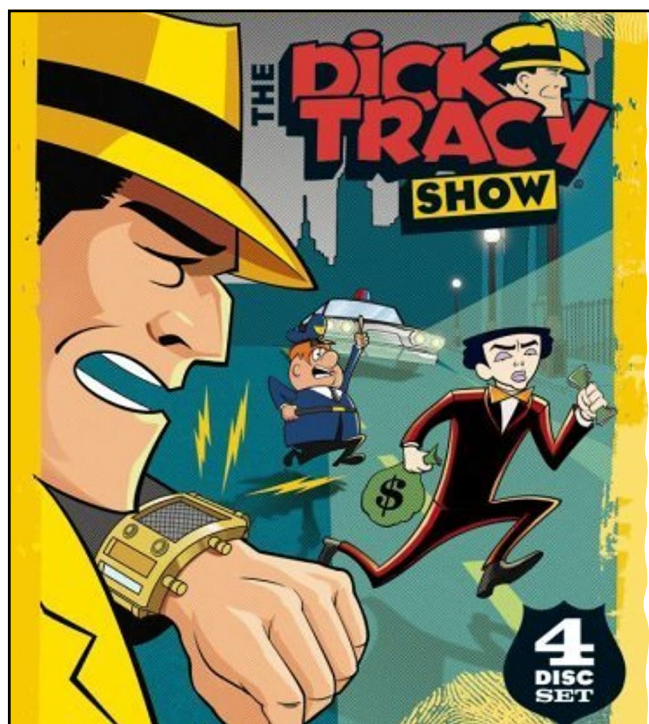
HENRY FORD HEALTH



We Need Solutions

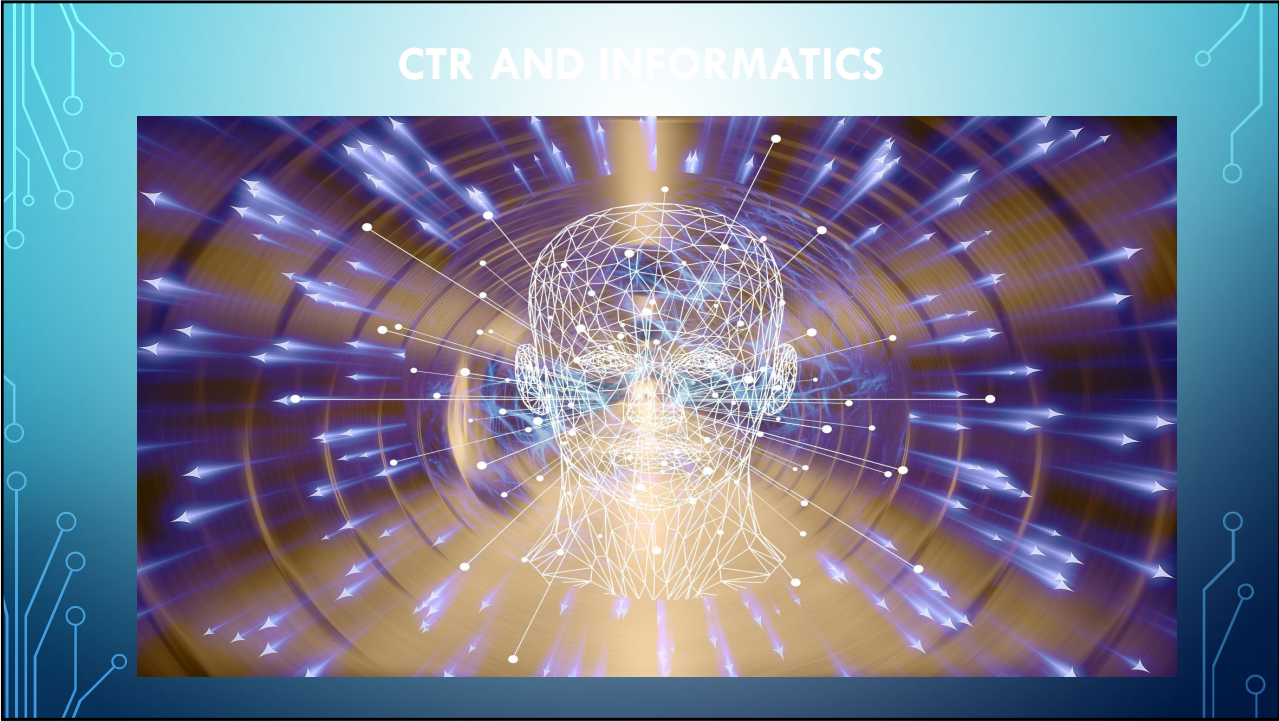
- Work pressures and stressors trying to stay current
- Constant increasing need for cancer data
- Shrinking of funds for resources for clinical abstraction
- Demands for more real-time data (RCRS, etc)
- Demands for CTR's far outweigh the supply

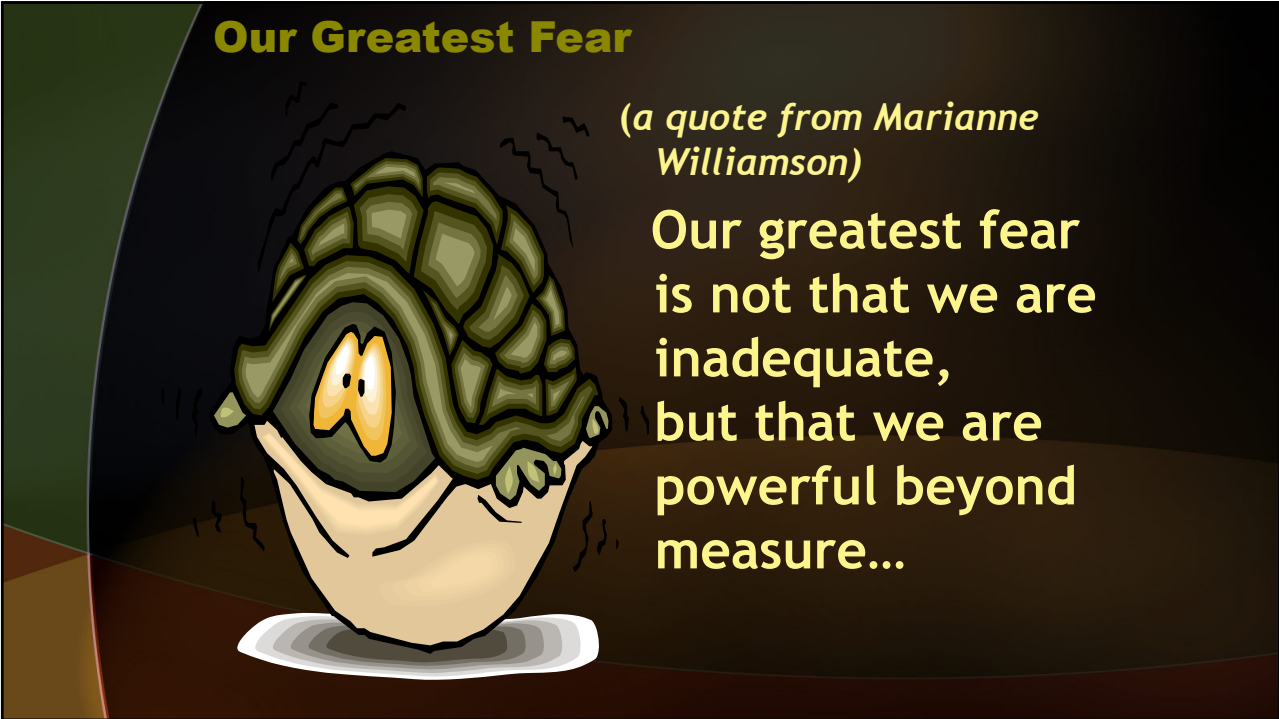
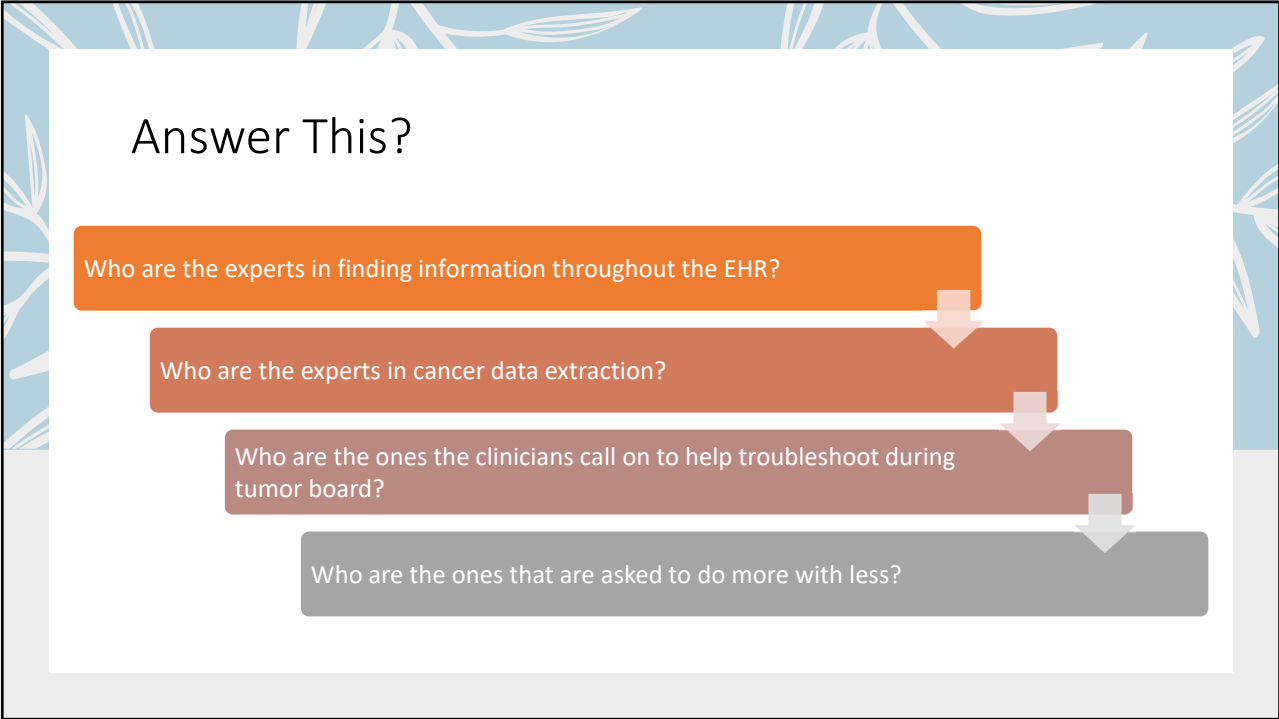




Who
Remembers
This?







CTRS ARE AWESOME!

- AJCC – 8th edition dedicated to US
- CTRs in working sessions for protocol development
- CTRs working for software vendors
- CTRs working with internal IT team
- CTRs working for national and international data registries
- CTRs working for standard setters

TECHNOLOGY & INNOVATION APPLICATION TO THE CANCER REGISTRY ... IMPLICATIONS FOR THE FUTURE



Turning Cancer Data into Discovery

- **SEER*Stat**- Provides a convenient, intuitive mechanism for the analysis of SEER and other cancer-related databases.
- **SEER*Prep**- Converts ASCII text data files to the SEER*Stat database format, allowing you to analyze your cancer data using SEER*Stat.
- **Health Disparities Calculator (HD*Calc)**-An extension of SEER*Stat designed to generate multiple summary measures to evaluate and monitor health disparities. HD*Calc allows the user to import SEER data or other population-based health data and calculate any of eleven disparity measurements.
- **Methods & Tools for Population-based Cancer Statistics**- Methods, software, and tools for the analysis, reporting, and visualization of cancer statistics. Includes geospatial methods and tools for state-level and small area cancer statistics.

SOURCE: <https://seer.cancer.gov/registrars/tools-software.html>

SEER REGISTRY SOFTWARE



- **SEER Abstracting Tool (SEER*Abs)** - Allows cancer tumor registrars to collect and store data abstracted from patients' medical records.
- **SEER Application Programming Interface (API)** - Web service that provides access to various SEER Program data sets and algorithms. This service is available to developers who wish to incorporate SEER resources into their own systems.
- **File*Pro** - View and manage data that are stored in text files. It is primarily designed for managing large cancer data files formatted according to the NAACCR Data Standards (Volume II), but it can be configured to be used with any data stored in a fixed column or CSV file format.
- **Match*Pro** - Designed to find records that refer to the same entity across different data sources using a probabilistic record linkage framework based on the Fellegi and Sunter model.
- **SEER Data Management System (SEER*DMS)**- Provides support for all core cancer registry functions -- importing data, editing, linkage, consolidation, and reporting.

Impact of Informatics in the Registry

Improve registry operational processes through EHR automated workflows


Increase abstracting efficiency through partial abstraction

Support data-driven decision making for healthcare practitioners using dashboards

WHAT ROLES CAN WE PLAY?

Who really understands the electronic health record (EHR) better than a CTR?

We are detectives that know where to find certain information. Encounters, Notes, Labs, Media, Care Everywhere, Procedures, etc



When the user selects data on the left (highlighted in blue) - the system highlights the corresponding data in the path report (in yellow). The registrar determines if the data mapping is correct or makes an appropriate change and accepts the data to be updated in the patient's record.

Registry Field	Registry Data Mapping	Accept Data
Patients Last Name	Doe	<input type="checkbox"/>
Patients First Name	Jane	<input type="checkbox"/>
Date of Birth	07/01/1941	<input type="checkbox"/>
Medical Record Number	2378654	<input type="checkbox"/>
Facility Accessioning Case	[REDACTED]	<input type="checkbox"/>
ICD-O Site Code	C73.9 - Thyroid gland	<input type="checkbox"/>
Laterality	01 Right Origin Of Primary	<input type="checkbox"/>
Tumor Size	250mm	<input type="checkbox"/>
ICD-O Histology Code	8260/3 - Papillary adenocarcinoma, NOS	<input type="checkbox"/>
Lymph-Vascular Invasion	01 Lymph-vascular Invasion Not Present (absent)/Not Identified	<input type="checkbox"/>

ICD: 07/01/1941
 MRN: 2378654
 Ordering Physician: [REDACTED]
 Order Date: 07/04/2017
 Pathologist: [REDACTED], MD
 Location: [REDACTED] Hospital
 Procedure: Thyroidectomy
 Specimen Integrity: Intact
 Specimen Size: 4.3 x 2.5 x 1.5 cm Right; 4.0 x 2.5 x 1.6 Left
 Tumor Focality: Unifocal, involves isthmus and right thyroid
 Tumor Laterality: **Right lobe and isthmus**
 Tumor Size: 2.5 cm
 Histologic Type: Papillary thyroid carcinoma
 Margins: Positive, right thyroid and isthmus
 Lymph-Vascular Invasion: Not identified
 Extrathyroidal Extension: Present
 Pathologic Staging (pTNM):
 Primary Tumor (pT): pT4a
 Regional Lymph Nodes (pN): pN1
 Number lymph nodes examined: 3
 Number lymph nodes involved: 1
 Distant metastases (pM): pM/a

Resource: Interoperability, EHRs and the Cancer Registry 10.30.2019



RESEARCH

DATA REQUESTS

WRITING OPPORTUNITIES

PUBLICATION CREDIT

EDUCATION PREPARATION FOR THE FUTURE



- AS/AA
- BS/BA
- MS/MA
- PhD/EdD/DrPH, etc
- Certifications

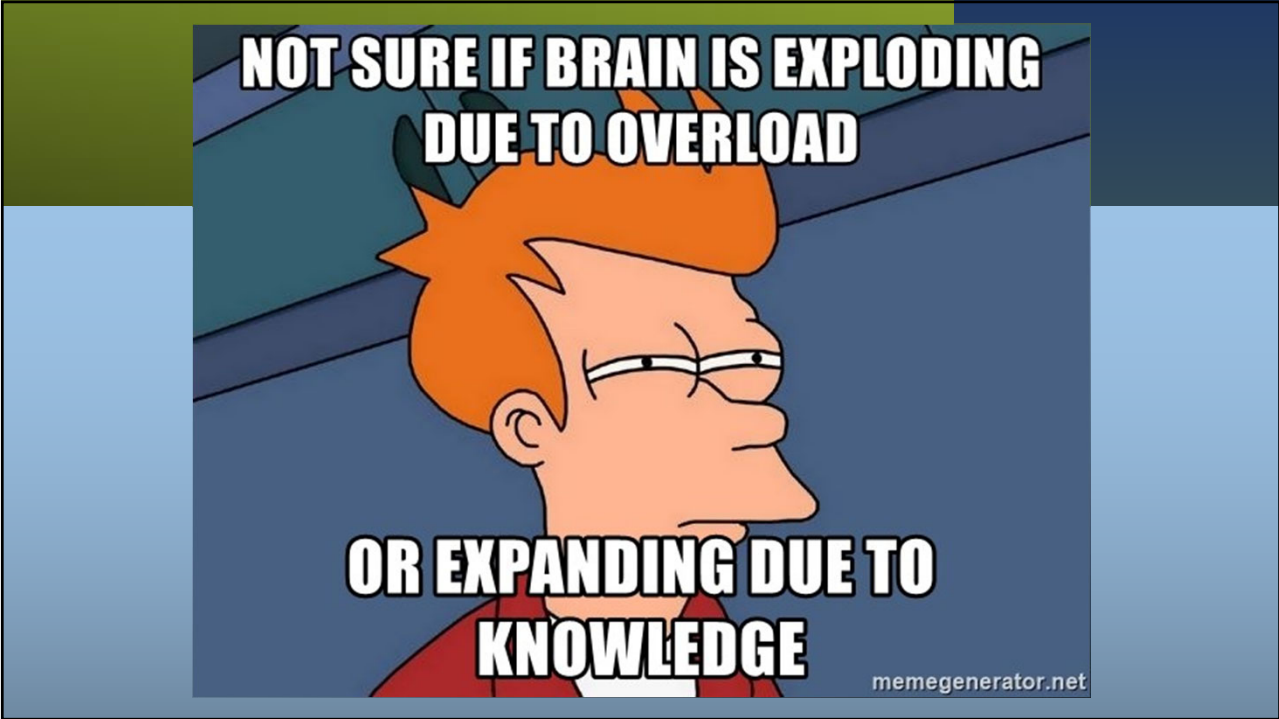


EDUCATION

- FUN FACT! NCRA has complimentary mini shorts from the Informatics committee that are on the CCRE webpage with more to come
<https://www.cancerregistryeducation.org/best-practices>
- NCRA Knowledge based badge program in development for data management
- YouTube
- LinkedIn Learning
- NAACCR webinars
- State and National conferences
- NCRA Informatics
<https://www.ncra-usa.org/Education/Informatics>
- And so many more!

REINVENT THE FUTURE

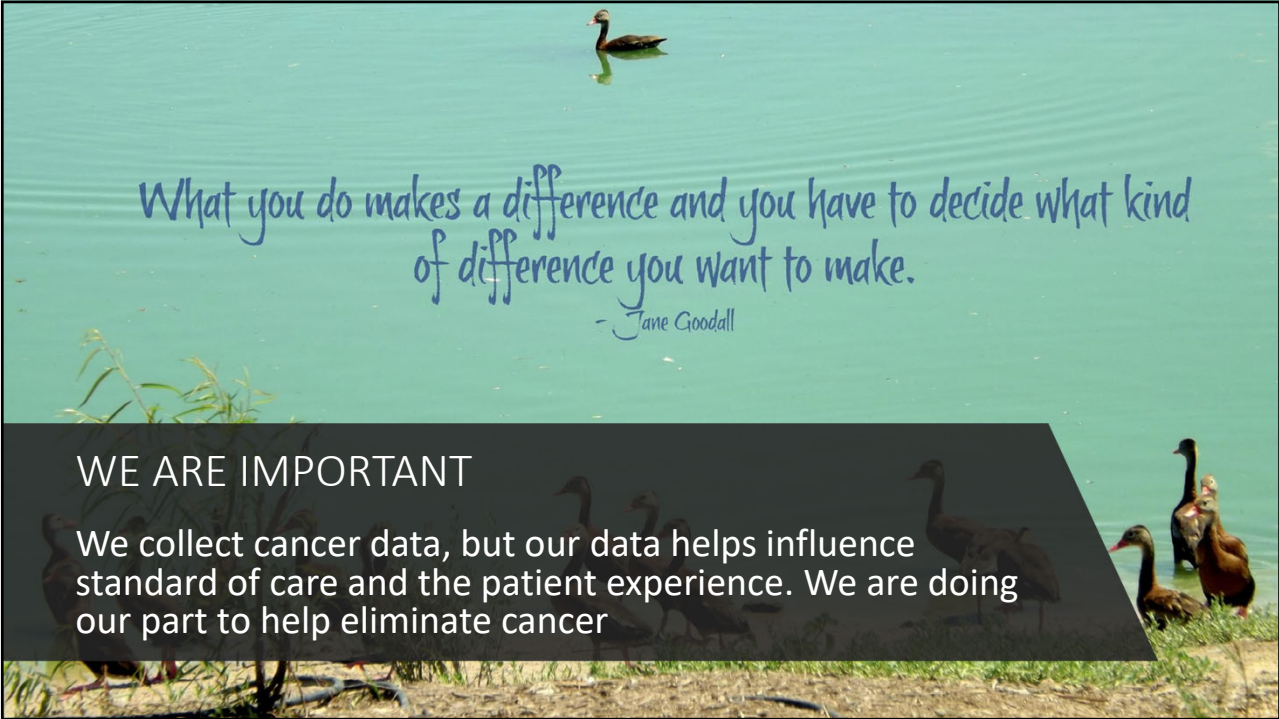
- Call for Volunteers
 - Standard Setters
 - For Example: Field Testing of Proposed New Data Items end of 2022 from NAACCR Mid-Level Tactical Group (MLTG)
 - State and National Organizations
 - Health System Interoperability Committees
 - Software Focus Groups
 - Cancer Committee
 - And More



In “FUN” matics

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Thank You For Your Attention and Engagement

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Fabulous Prizes



CE Certificate Quiz/Survey



CE Phrase

-

Link

- <https://survey.alchemer.com/s3/7032822/IT-Worked-for-Me-In-FUN-matics-in-the-Cancer-Registry>



Coming UP...

Melanoma 2023

- Guest Host: Janine Smith
- 8/3/2023

Coding Pitfalls 2023

- Guest Host: Janet Vogel
- 9/7/2023



Thank you!



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