

**Building Smoking Cessation Electronic Health Record
Functionalities and Workflows for the Oncology
Setting: A Build Guide for Project Leaders, Clinicians,
and Information Technology Personnel
(Cerner Version)**



**Cancer Center Cessation Initiative (C3I)
Coordinating Center
Fall 2019**

University of Wisconsin Carbone Cancer Center

Clinical IT Build Template

Smoking Cessation Workflow and Build in Cerner

The National Cancer Institute’s Cancer Center Cessation Initiative (C3I) was established in 2017 with the goal of helping cancer centers build and implement sustainable tobacco cessation treatment programs to routinely address tobacco cessation with cancer patients.

As part of the NCI Cancer Moonshot program, the C3I aims to:

1. Refine electronic health records (EHR) and clinical workflows to ensure the systematic identification and documentation of smokers and the routine delivery of evidence-based tobacco cessation treatment services,
2. Overcome patient, clinician, clinic, and health system barriers to providing tobacco cessation treatment services,
3. Achieve institutional buy-in that treating tobacco use is a component of organizational “Standard of Care,” and,
4. Create mechanisms to sustain tobacco cessation treatment services so that they continue beyond the funding period of the C3I.

This C3I Electronic Health Record Build Guide is designed to assist project leaders, clinicians, and information technology personnel who use Cerner as their EHR platform to build smoking cessation functionalities and workflows for the oncology setting. While written specifically for the Cerner EHR, the guidance should be applicable more broadly.

This Guide was produced by the Cancer Center Cessation Initiative (C3I) Coordinating Center at the University of Wisconsin Carbone Cancer Center.

Overview and Rationale

CAVEAT: Due to staff and budget limitations, descriptions of Cerner EHR functionalities for the Cancer Center Cessation Initiative (C3I) are limited. In particular, this Cerner EHR Build Guide contains very little information about pulling data from the Cerner EHR for the C3I biannual reports.

Electronic health record (EHR) technology can be used to facilitate many of the key goals of the National Cancer Institute’s (NCI) Cancer Center Cessation Initiative (C3I), including identifying all adult oncology patients who smoke and providing evidence-based smoking cessation treatment to them during and/or following oncology visits.

This Clinical IT Build Guide provides C3I Grantees, specifically those who work on a Cerner EHR platform, a description of and technical guidance for building and implementing key EHR functionalities that can be used to advance the goals of the C3I. These functionalities include:

1. Documenting **Smoking Status**
2. Creating a Custom **Smokers Registry** utilizing Cerner’s **HealthRegistries** module
3. Creating **On-Demand Oncology Patient Tobacco Use Reports** via **Operational Reporting**
Note: This option is used when HealthRegistries is not utilized
4. Facilitating Smoking Cessation workflows using **Orders, Tasks, and PowerForms**
5. Building **Referral Orders** for internal tobacco cessation services/programs, external tobacco cessation services/programs, and tobacco cessation medications
6. Building **Discern Alerts** and **Plans of Care**

This document targets three audiences:

1. **C3I Site Leaders** who oversee the C3I cessation programs at their cancer centers
2. **Clinical Personnel** who utilize the C3I cessation programs at their cancer centers
3. **Information Technology Personnel** at C3I sites who work with site leaders and clinical staff to build and implement the required EHR functionalities

These materials can be used by any healthcare system or program that uses the Cerner EHR to build and enhance EHR-based smoking cessation treatment interventions for their patients. **The following symbols throughout this Build Guide highlight information of interest to three primary audiences:**



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1. These workflows and build instructions are designed to serve as tools to aid C3I sites.

Note: C3I sites are not required to use all of the functionalities described in these instructions, and sites can modify any of these functionalities as needed to meet their health care system’s workflows, EHR infrastructure, and clinical priorities. Along with your clinical and IT teams, you will determine which components of this guide support the workflows and smoking cessation treatment programs you are implementing.

2. Throughout this document, we refer to “smoking,” “smoking status,” and “smokers.” This is based on the C3I focus on intervening with patients who smoke cigarettes. This focus results from data which support that the bulk of tobacco-caused cancer risk results from combustible tobacco use, particularly cigarette smoking. Of course, any C3I site or oncology setting can expand its focus beyond cigarettes, and the workflows and build guides would need to be adjusted to reflect that expanded focus.

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Glossary

Cancer Center Cessation Initiative (C3I) –

This initiative, funded by the National Cancer Institute (NCI), is designed to increase the reach and effectiveness of smoking cessation treatment delivery to oncology patients who smoke in the 42 NCI-funded Cancer Centers.

Cerner Discern Alerts/Rules – Discern Alerts/Rules alert providers to recommended clinical actions and are triggered by specific documentation in the system (e.g., certain orders, a particular diagnosis (such as tobacco use), or an overdue screening test).

Cerner Millennium – Cerner Millennium is an evidence-based clinical decision support for clinicians to help reduce treatment discrepancies.

Discern Expert – Discern Expert is an event-driven, rules-based clinical decision support tool to build Discern Alerts/Rules within Cerner Millennium. It allows for creating and building Expert Knowledge Modules (EKMs, also known as Rules) in an “If-Then” format. If specified conditions are met, then a specified action is taken. Most rules can be divided into two categories: rules that generate alerts, and rules that automate a clinical workflow.

DTA – Discrete Task Assay. A build component for clinical documentation.

EHR – Electronic Health Record.

ENDS – Electronic Nicotine Delivery Systems.

Expert Knowledge Modules (EKM) – Also known as Rules.

Message Center – Message Center is a secure communication tool within Cerner, used to share results, notes, and messages between users within the organization.

Interface – An interface is the connection and interaction between two or more separate components of a computer system exchanging information.

IT – Information Technology.

Workflow MPage – An MPage is a clinical documentation template for efficiently moving through common workflows to minimize screen switching between clinical activities.

NCI – National Cancer Institute.

Openlink – Openlink refers to Cerner’s Bridges application and interface, used to build a referral with a third-party system.

Orders – Referral Order (internal services; external services) – Orders are used to generate a referral. Orders streamline the process for clinicians to send patients to specialists.

A **Medication Order** is used to prescribe medications.

A **Referral Order Result** is the outcome of a referral.

Order Entry Format (OEF) – The Order Entry Format includes order details to be completed before an order can be signed. The OEF also determines what will appear to the clinician when an order action (e.g., Order, Cancel, Discontinue) takes place.

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Glossary, cont.

PowerInsight (PI) – PowerInsight is Cerner’s operational reporting platform.

PowerPlan “Plan of Care” – PowerPlan “Plan of Care” is a function to group treatments and interventions in order to guide clinicians through a clinical intervention, including orders and patient education.

Registry – A registry is a dynamic, collective data pool defined by its criteria. Rather than needing to run a report, a registry dynamically updates whenever additional patients qualify for the determined criteria, as well as whenever a patient may no longer match the criteria. For the purposes of this document, our registry refers to the data collection of oncology patients who smoke.

Reference Text – A reference text is a template note for commonly used documentation or notices. It is fully customizable and used for writing notes and displaying information.

Tobacco Treatment Program (TTP) – A program that provides tobacco dependence treatment.

Tobacco Treatment Specialist (TTS) – Tobacco Treatment Specialist.

Workflow – The process clinicians/staff use to collect and document patient information, treatment, and services.



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Smoking Status Documentation Build

The EHR provides a mechanism to systematically document the smoking status of patients who present to the targeted C3I clinical sites. Accurately documenting whether a presenting patient smokes or not at the point of care is an essential first component for intervening with patients who smoke. Non-physician staff (e.g., medical assistants, nursing personnel) are typically responsible for documenting smoking status, and this documentation typically occurs during the rooming process of a patient clinic visit or upon admission. However, the patient's

smoking status can be documented and/or revised in the EHR by clinical or tobacco treatment staff at any point of care, including after a C3I tobacco treatment visit or during a scheduled follow-up contact in person or via phone.

The recommended steps to build the smoking status documentation function below use components already in Cerner. By properly entering smoking status at the initiation of care, C3I staff can facilitate the subsequent reporting of such status (e.g., for C3I biannual reports).



Clinical Personnel



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Workflow for Smoking Status Documentation

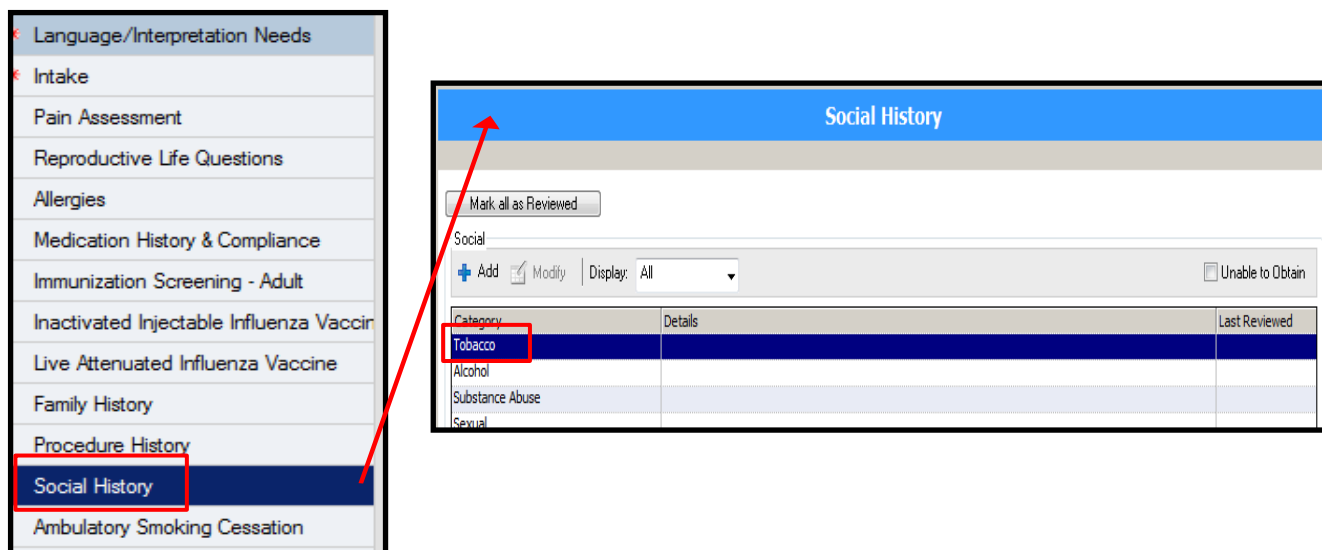
This section demonstrates a workflow that guides the clinician to document a patient's **smoking status**. Smoking status documentation is in the Social History of Cerner PowerChart, and already exists within your Patient Navigator in Cerner PowerChart.

Smoking Status Documentation in the Cerner EHR

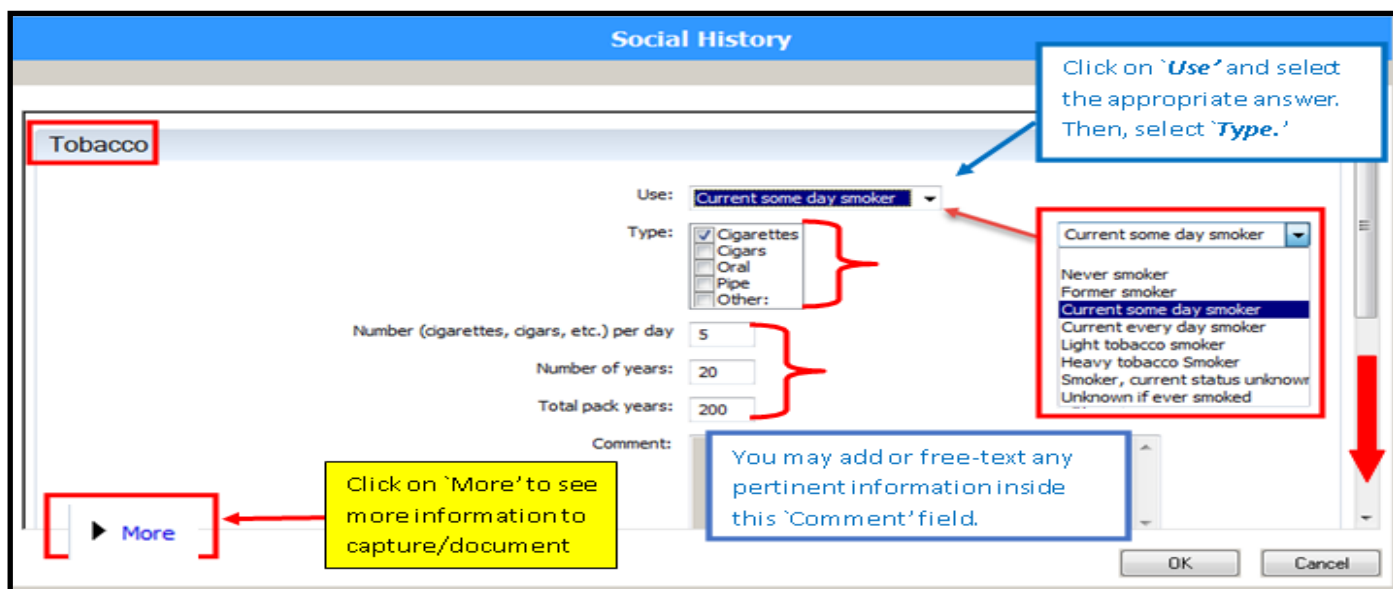
1. Login to PowerChart and open the patient's chart.
2. In the Menu Navigator on the left-hand side of the patient chart, select the Histories tab.
 - A. Alternatively, you can access Social History via any Intake Assessment PowerForm that has the Social History section included.
3. In the Social History section, double click on the Tobacco category.

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4. The Tobacco window will display.



5. In the Use field, document the patient's smoking status. Typical smoking status classifications in Cerner are overlapping and include:

- A. Current Every Day Smoker
- B. Current Some Day Smoker
- C. Former Smoker
- D. Heavy Tobacco Smoker
- E. Light Tobacco Smoker
 - I. Never Smoker
 - II. Smoker, Current Status Unknown
 - III. Unknown If Ever Smoked


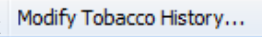
Clinical IT Build Template Smoking Cessation Workflow and Build in Cerner

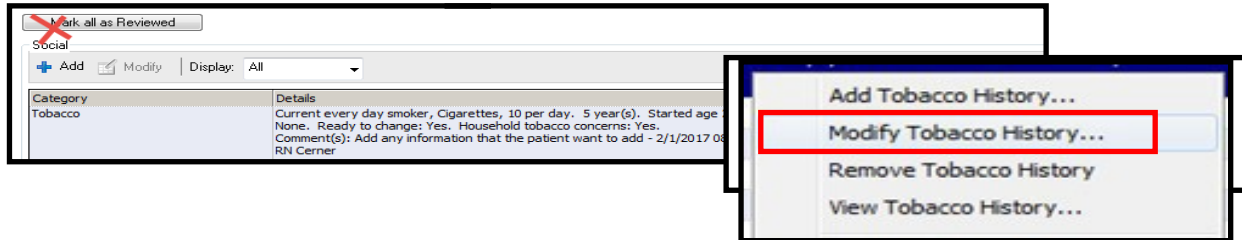
6. Select the type of tobacco used by the patient in the Type: field.
7. Document the Number of Years the patient has smoked.
8. Document the total packs of cigarettes the patient smokes per year in the Total Pack Years: field.
9. Add a Comment if necessary.

10. In addition, if you click More on the left side of the Tobacco window, then scroll down, you can also capture the following data:
 - A. Started at age: years
 - B. Stopped at age: years
 - C. Previous treatment: None, Counseling, Medications, Nicotine replacement, Other
 - D. Ready to Change: Yes/No
 - E. Concerns about tobacco use in household: Yes/No
11. Once completed, this information will populate the Social History section.

Category	Details	Last Reviewed
Tobacco	Former smoker, Cigarettes, 5 per day. 20 year(s). Total pack years: 200. Started age 20 Years. Previous treatment: None. Ready to change: Yes. Household tobacco concerns: Yes.	2/2/2017

When a patient has had previous tobacco history documented, follow the steps below:

1. DO NOT click on the  button. Right click and select .
2. The Tobacco window will display. Follow steps 5 to 11 from the previous page to modify anything necessary.



3. When one of the following values are documented in the patient's chart, it will trigger Discern Rules that will then create a Suggested Smoking Cessation PowerPlan that the clinician can modify, initiate, or void.
 - A. Current Every Day Smoker
 - B. Current Some Day Smoker
 - C. Heavy Tobacco Smoker
 - D. Light Tobacco Smoker
 - E. Smoker, Current Status Unknown
4. These values will also be included as part of the inclusion criteria for the Smokers Registry in the HealthRegistries module.



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Other Considerations: E-Cigarettes

Some sites will document the use of **e-cigarettes/electronic nicotine delivery systems (ENDS)**. The Centers for Medicare and Medicaid Services does not consider e-cigarette use as tobacco use and Cerner recommends creating a custom history section to document e-cigarettes/ENDS. This prevents e-cigarette/ENDS users from erroneously contributing to your numerator or denominator of smokers.



C3I Site Leaders



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Smokers Registry Fundamentals & Build

An EHR-based **Smokers Registry** can be used to meet one of the key goals of the C3I: to target all patients who smoke for cessation intervention. Registries serve as tools to group patients based on specific criteria/data found in the EHR.

The Overview of Cerner's HealtheRegistries module (below) uses customizable patient criteria that can include adult patients 18 and older who: a) have a smoking status documentation of "current smoker", OR b) were prescribed varenicline or a nicotine replacement medication within the last year, OR c) have a diagnosis of nicotine dependence within the last year.

In addition to identifying and targeting

patients who smoke for cessation interventions, a Smokers Registry can assist with generating reports.

This Smokers Registry is intended to help identify and document all new cancer center patients who smoke. Note— some C3I sites are targeting *all* cancer patients who smoke for intervention, not just new patients. C3I sites can customize their Smokers Registry to do that as well.

The Smokers Registry in this guide is a customized version of Cerner's standard Tobacco and Alcohol Screening Wellness Registry. Importantly, each C3I site can customize their own Smokers Registry by adjusting their patient inclusion and exclusion criteria.



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Using Cerner's HealtheRegistries to Build a Smokers Registry

The **HealtheRegistries** functionality compiles and standardizes data from multiple sources and uses this data for decision support, population health tracking, and reporting. HealtheRegistries is a secure, web-based database used to identify, score, and predict health risks of individual and populations of patients. This allows providers to target and implement specific treatment interventions.

The HealtheRegistries module runs on the HealtheIntent platform. Data flows continuously through the HealtheIntent platform to update registries and outcome measures in close to real time. It offers a comprehensive management database of disease, wellness, and provider/organizational scorecards built on performance quality metrics. HealtheRegistries has standard prebuilt Registries that can be used, including a customizable Smokers Registry. For a detailed overview of HealtheRegistries please visit: <https://wiki.cerner.com/display/healtheregistriesHP/Overview+of+HealtheRegistries>.

Smoking Cessation Workflow and Build in Cerner

To build a Smokers Registry, the criteria for a patient who smokes is required. A Registry groups patients based on criteria defined within the EHR. Below are criteria that utilize discrete data documented in the EHR. There is substantial flexibility in determining such criteria, but two key components are ensuring that:

1. The criteria identify all the intended or targeted patients who smoke.
2. The criteria are available, discrete, and searchable in the EHR.

Step 1: Identify the relevant demographic information from the EHR that define the intended patient pool.

Required (unless otherwise indicated) Smokers Registry information needed for every patient:

1. Age 18 years or older.
2. Patient data:
 - A. Name
 - B. Address
 - C. Phone number – home and/or mobile (preferably both)

Step 2: Determine Smoking Status via the information available in Cerner. Patient must have a recorded Smoking Status that is NOT equal to:

1. Former Smoker
2. Never Smoker

Patient must meet one of the following criteria:

1. One of these Smoking Statuses in their documented Social History in the last 365 days:
 - A. Current Every Day Smoker
 - B. Current Some Day Smoker
 - C. Smoker, Current Status Unknown
 - D. Heavy Tobacco Smoker
 - E. Light Tobacco Smoker

OR

2. Order placed for Nicotine Replacement Therapy (NRT) or Varenicline (Chantix) in the last 365 days.

OR

3. Diagnosed with Nicotine Dependence. This includes ICD-10 codes F17.200-F17.219(minus F17.201 and F17.211). “Diagnosed” means:
 - A. Diagnosis is on Problem List; OR
 - B. Diagnosis has been used at least once in an Encounter Diagnosis in last 365 days; OR
 - C. Diagnosis has been used at least once as an Invoice Diagnosis in last 365 days.

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Operational Reporting: Oncology Patients

Tobacco Use – Outpatient Report is available in Operational Reporting 16.06 and later. This report displays a list of patients and their tobacco use status with appointments scheduled in a defined future period. This report is available in *SAP BusinessObjects* BI Launch Pad.

Who should use this report?

1. Clinic manager
2. Clinical Staff
3. Providers

Tobacco Use - Outpatient			
Report Date & Time: 6/6/2016 4:17 PM		Pages: 1 of 1	
Appointment Date Range: 8/15/2014 12:00:00 AM to 12/1/2014 12:00:00 AM		Current User: RW044095	
Personnel Name	# of Patients	Oncology Clinic	# of Patients
Collins, Lela	2	BE Clinic	5
Thomas, Larry	3		
	Total	Total	5

How often should you run this report?

This report is intended to run daily, weekly, or as determined by your program and workflow.

Tobacco Use - Outpatient					
Report Date & Time: 6/6/2016 4:17 PM			Pages: 1 of 1		
Appointment Date Range: 8/15/2014 12:00:00 AM to 12/1/2014 12:00:00 AM			Current User: RW044095		
BE Clinic					
Patient Name	Person- MPI	Birth Date	Personnel Name	Appointment	Tobacco Use
AHMED, MOHAMED	3561935	04/16/1989	Collins, Lela	09/10/2014 08:00	Never smoker
APOTTI, KARI	3584976	01/01/1955	Thomas, Larry	11/03/2014 16:30	Not Documented
APOTTI, KIMMO	3584972	01/01/1961	Thomas, Larry	11/04/2014 08:00	Current every day smoker
MAHMOUD, MAHMOUD	3616305	04/15/1989	Collins, Lela	09/10/2014 08:30	Not Documented
PACHERO, RICARDO	1667925	01/01/1949	Thomas, Larry	09/03/2014 14:00	Current every day smoker

Report Elements

The following elements are displayed when viewing the report:

1. # of Patients
2. Admit Date & Time (Labeled as Admit)
3. Appointment Start Date & Time (Labeled as Appointment)
4. Appt Location- Nurse Unt (Scheduled) (Labeled as Oncology Clinic)
5. Birth Date
6. Person- MPI
7. Person Name- Full (Labeled as Patient Name)
8. Personnel Name
9. Tobacco Use

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Smoking Cessation Workflow and Build in Cerner

Running the Report

1. Select Oncology Clinic(s): Enter desired clinics
2. Choose Appointment Start Date & Time
3. Enter user-defined scheduling appointment begin date
4. Enter user-defined scheduling appointment end date
5. Enter “N” Days Prior To Current

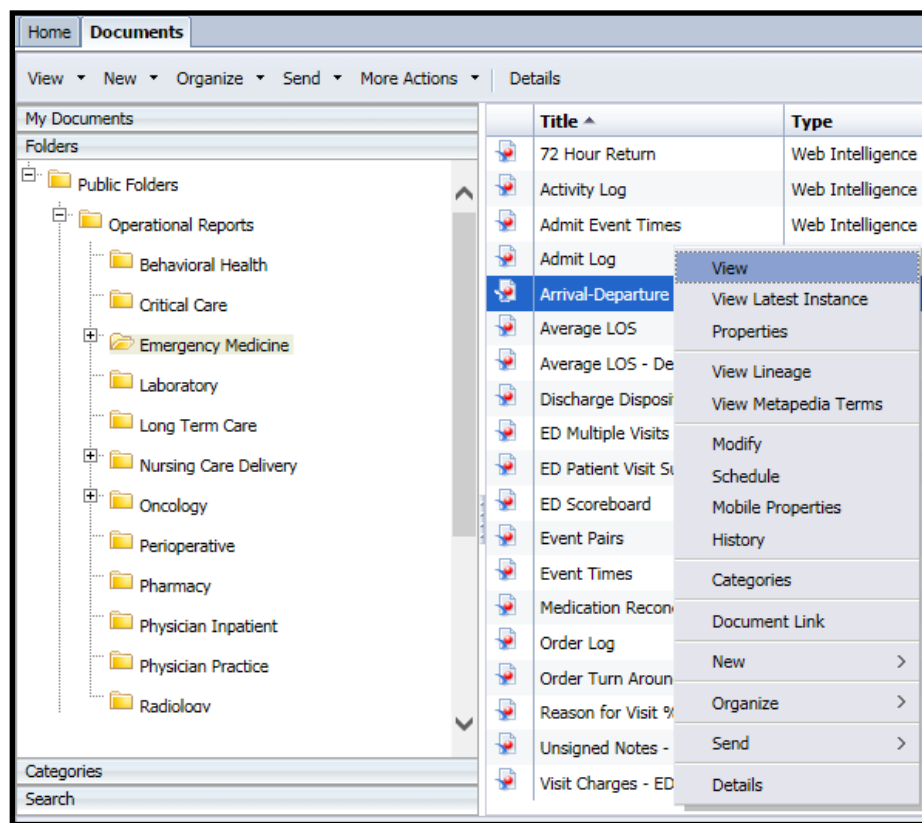
Filtering The Report

From the Summary and Detail tabs, use Input Controls on the left pane to filter by Oncology Clinic, Personnel Name, Appointment Day and Patient Name.

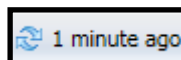
Localizing a Prompt

Installing Operational Reporting does not automatically add content to the reports. You need to localize the prompt in order to retrieve the appropriate data in your domain. Complete the following steps to localize a prompt:

1. Right-click a report and select View.



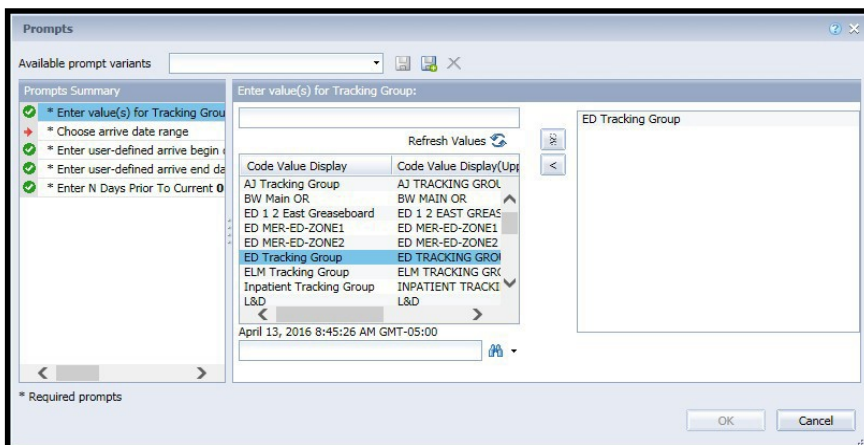
2. From the lower-right corner, click Refresh Data.



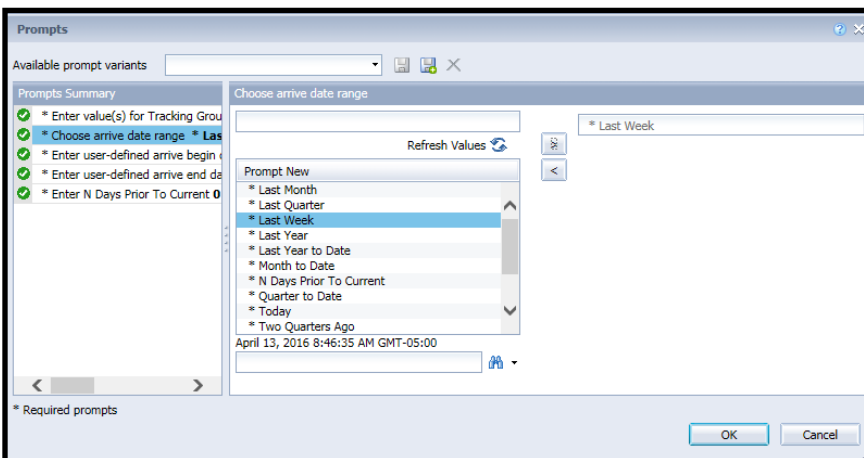
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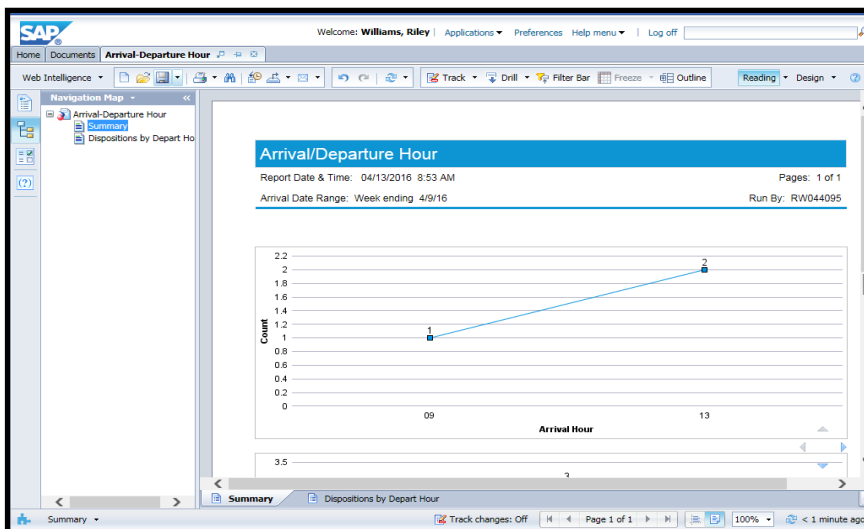
- The Prompt box displays. From the Prompt box, select the appropriate data for your organization.
Note: The Cerner standard is to select short date ranges when initially localizing each report. You will be able to change this data each time you run the report.



- Click OK. **Note:** All required prompts must have a value selected before you will be able to click OK.



- Click Save.



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C3I Site Leaders



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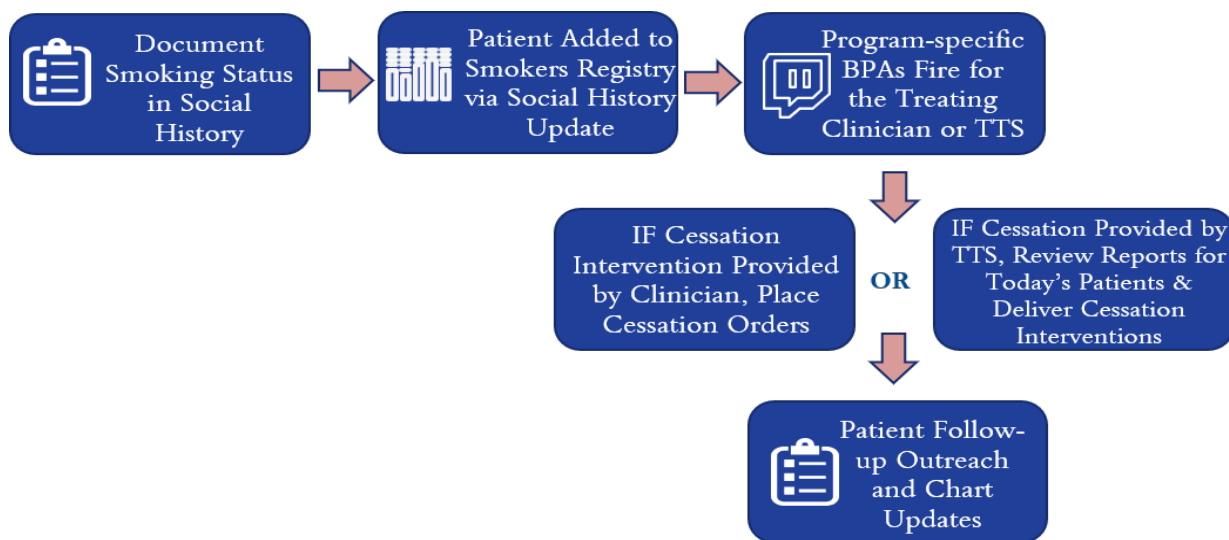
IT Personnel

Workflow Example

Workflows will vary across C3I sites based on your tobacco dependence treatment program components.

Once you have identified the oncology patients who smoke as targets for cessation interventions – typically by using the **Smokers Registry** explained above – you can then use the EHR to guide the intervention. This intervention, as with other clinical activities, needs to be integrated into the workflow of the clinic or inpatient visit. The program components you have decided to include in your C3I program will guide the workflow components you build in the EHR.

With these caveats in mind, here is a **sample workflow** that includes common C3I program components:



Sample Workflow:

An adult patient visits the oncology clinic. The patient is identified and documented as a current smoker. This adds the patient to the Smokers Registry to be subsequently targeted for intervention.

Documenting Current Smoker also triggers a Discern Rule to fire a Suggested Plan of Care during the visit. This provides the clinician a Plan of Care and language to advise the patient that quitting smoking is the best thing they can do to improve their health.

The Plan of Care also contains recommended referral orders to refer the patient to the internal Tobacco Treatment Specialist (TTS), and/or place a referral order to external tobacco cessation resources such as the state tobacco quitline and/or NCI's SmokefreeTXT.

The Plan of Care also includes a smoking cessation medication(s) order.

The documentation of current smoking adds a Smoking Cessation Task to the patient's record, a Cerner function that guides clinical activities related to addressing smoking with a patient.

When it is time to contact a patient six months post clinic visit/quit date, the TTS or other clinician will see the patient's name and contact information on the six-month report, indicating which patients are due for outreach to assess smoking status. Patients appear on this report one month prior to their six-month outreach target date. Smoking status is documented/updated on the Smoking Cessation PowerForm via Ad Hoc charting each time the TTS contacts the patient.

Smoking Cessation Documentation Build



Build the Alpha Responses, Discrete Task Assays, PowerForm Sections, and PowerForms for Smoking Cessation

PowerForms allow end users to track documentation. **PowerForm Sections** capture the discrete data elements you will need for reporting. **Discrete Task Assays (DTA's)** and **Alpha Responses** for the PowerForm Sections are added to collect any additional data that is needed.

Cerner PowerForms Build Components

Step 1: Build Nomenclatures “Alpha Responses”

Step 2: Build Discrete Task Assays (DTA's)

Step 3: Build PowerForm Sections

Step 4: Add Section to a PowerForm

Step 1: Build Nomenclatures “Alpha Responses”

Searching the system (by name or code) for existing Alpha Responses (Nomenclatures) is done before creating a new one. To search for existing Alpha Responses:

1. Login to the CMTTool.exe
2. The CMT Tool opens.
3. Search by name in one of the following ways:
 - A. Entering the first few letters or numbers in the Search box. Upper left of window.
 - B. Entering the whole word or complete code into the Search box.
4. Select one of the following Search Methods from the list: Starts With, Contains, or Exact Match. Starts With is the default.
5. Select the Target of the Search. The last selected target of a search is saved as a default preference for the next time the search is initiated. The calling application might have a default target for the search, including setting the terminology axes when applicable. There are three possible targets for the search engine to act upon:
 - A. Click Show Advanced Options.
 - B. Search by Name or Code.
 - C. Click the ellipsis (...) after the Terminology, Terminology Axis, or Subset box to select a more specific field in which to search.

6. After selecting the appropriate option from above, the Search Results list is displayed. Click the term and then click OK or double-click the term to add it to the calling application.

If the term you are searching for is not found, you will need to build a new Alpha Response as follows.

1. Select New > Term from the Task menu.
2. In the Name box, enter the nomenclature name you want to define (required).
3. In the Short string box, the system repeats the name you entered in the Name box. Enter a shorter description of the nomenclature name if you want.
4. In the Mnemonic box, the system repeats the name you entered in the Name box. Enter a mnemonic for the name if you want.
5. In the Principle type box, select an option from the list, such as alpha response, finding, generic name, or procedure (required). Principle types are defined on Code Set 40#
6. In the Vocabulary box, select Patient Care from the list (required). Vocabulary options are defined on Code Set 400.
7. It is not necessary to complete the Source identifier, Vocabulary Axis, and String status boxes when defining nomenclatures for patient care.
8. In the Language box, select the language in which the term is expressed, such as English (required). Languages are defined in Code Set 36.
9. The String Source and String Identifier boxes are inactivated.
10. In the Begin Effective date box, you can accept the default of today's date or enter another date.
11. In the End Effective date box, you can accept the default date or enter another
12. If you are defining several nomenclatures that will be the same except for name, short string, and mnemonic, click New to save your entry and leave all the field entries completed except for those three. Continue defining nomenclatures. If you are defining only one nomenclature term, click OK to save your entries.

Step 2: Build Discrete Task Assays (DTA's)

To add a discrete task assay (DTA) to the database:

1. Open DCP Tools and expand Documentation Management.
2. Double-click DTA Wizard. The DTA Wizard window is displayed.
3. Click Clear to activate the window so you can define a new DTA.
4. Enter the mnemonic of the new DTA in the Unique Mnemonic box. The mnemonic is limited to 40 characters, and spaces are allowed. The mnemonic can be displayed in forms. Mnemonics are used to make DTAs unique; that is, you cannot have two DTAs with the same value in the mnemonic column.
5. Press TAB. The mnemonic you entered is displayed in the Description box. You can expand this description if you want. The description is limited to 100 characters, and spaces are allowed. The name is displayed in the forms.
6. In the Activity Type box, select an item from the list. You will know what type of form the DTA can be associated with; this form is associated with a task, which is associated with an orderable. This orderable has a catalog type and an activity type. It is just another means of grouping DTAs logically.

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Note: When you add a DTA, the General Laboratory and Radiology options are not available on the Activity Type list. DTAs created under the General Laboratory and Radiology activity types are read-only in the DTA Wizard. This prevents the system from inadvertently losing information when users modify the activity type

7. In the Result Type box, select an item from the list. You can select only one item. The result type is the type of data that is entered by the user. If the DTA was Number of Bandages, the result type is numeric. If the DTA was Type of Bandage, the result type is either alpha or multi-select.

Result Types Available	
Alpha	Numeric
Calculation	On-line Code Set
Date	Provider
Date and Time	Text
Free text	Time
Multi	

8. Verify the Reference Range(s) box displays the default value of 0 Years to 150 Years. To modify the default value or add other reference ranges (for example, heart rate), click Reference Ranges. The Numeric Details/Alpha Details/Reference Ranges window opens.
9. To define alpha details, click Alpha Information when the result type is alpha. The Numeric Details/Alpha Details/Reference Ranges window opens. Examples of alpha details are the nomenclatures that the user could select from within a control on the form.
10. To complete the Numeric Map boxes when the result type is numeric, enter the maximum and minimum number of digits allowed in the Max and Min boxes. If the number is a decimal, enter the number of decimal places you want in the Dec box. For example, if the DTA were temperature, you could enter 3 in the Min box; enter 4 in the Max box; and enter 1 in the Dec box to allow users to enter the temperature as 98.6 or 103.2.
11. To define numeric ranges, click Numeric Range. The Numeric Details/Alpha Details/Reference Ranges window opens.
12. If applicable, select the Witness Required option. The Witness Required option determines if a DTA requires a witness signature before the user can sign the result.
13. To indicate you want an event code built with the same name as the mnemonic, select the Build a New Event Code option. This option is for Reporting purposes. These Event Codes are used to pull data from the system to build the desired Report. This option to build a New Event Code is active only when you add a new DTA to the database.

Note: IF new event codes are defined in DTA Wizard, you must cycle the Clinical Event server.

14. If you do not want the event code built with the same name as the mnemonic (you want to associate an existing event code with the new DTA), either enter the name (or a partial name) you want in the Find box (which causes that name or its closest match to display).

15. If applicable, select 0, 1, or 2 from the Intake and Output list. Intake and Output determines if a DTA populates the I&O 2G Flowsheet.

Note: Not needed for this build.

16. If applicable, enter the number of minutes in the Look Back Minutes for Related Results box. Look Back Minutes for Related Results determines how many minutes back in time the system looks for the result.

17. If applicable, enter the number of minutes in the Look Back Minutes for BMDI box. The value you enter in the Look Back Minutes for BMDI box determines how many minutes back in time a bedside medical device looks for results.

18. If applicable, enter the number of minutes in the Look Forward Minutes for BMDI box. The value you enter in the Look Forward Minutes for BMDI box determines how many minutes forward in time a bedside medical device looks for results.

19. Click Apply to apply your entries to the database.

20. If applicable, select 0, 1, or 2 from the Intake and Output list. Intake and Output determines if a DTA populates the I&O 2G Flowsheet.

Note: Not needed for this build.

21. If applicable, enter the number of minutes in the Look Back Minutes for Related Results box. Look Back Minutes for Related Results determines how many minutes back in time the system looks for the result.



22. If applicable, enter the number of minutes in the Look Back Minutes for BMDI box. The value you enter in the Look Back Minutes for BMDI box determines how many minutes back in time a bedside medical device looks for results.

23. If applicable, enter the number of minutes in the Look Forward Minutes for BMDI box. The value you enter in the Look Forward Minutes for BMDI box determines how many minutes forward in time a bedside medical device looks for results.



24. Click Apply to apply your entries to the database.

Step 3: Build PowerForm Sections

PowerForms (PowerForms.exe) run as a part of PowerChart Database Tools (DCPTools.exe). To start PowerForms:












1. Login to DCP Tools.
2. From the DCP Tools launch pad, open the Documentation Management section. Double-click PowerForms to open the PowerForms window.
3. Indicate what you are trying to do:
 - A. To design a new form, from the Form menu, select New, or click New Form  on the toolbar to open the Form Name - New Form dialog box.
 - B. To modify an existing form, from the Form menu, select Open, or click Open Form  on the toolbar to open the Form Name - Open Form dialog box. Double-click the form you want to modify or select it and click OK.

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









- C. To design a new form section, from the Section menu, select New, or click New Section  on the toolbar to open the Section Name - New Section dialogbox.
 - D. To modify an existing form section, from the Section menu, select Open, or click Open Section  on the toolbar to open the Section Name - Open Section dialog box. The names of the forms already built are listed in a tree. Double-click a form name to expand the tree to display the sections associated with the form. Double-click the section name or select it and click OK.
4. To create form sections, drag and drop icons from the PowerForms Toolbox onto the work canvas. Use the dots as a visual alignment guide. When a control has been placed on the form section, click its placeholder to select it. The item selected shows a thick border. Press Delete to remove the selected control.
 5. Right-click a placeholder to modify the item's properties.
 6. Create and modify your forms as needed.

PowerForms Toolbox

As you create sections for PowerForms, you use the control icons illustrated below. Drag and drop an icon to the approximate location that you want the item to be displayed on the form section. You can later apply precise positioning commands to align and match correlated items on the form. The controls each create a certain type of data entry or data display field on the form section, for example a text box or a numeric field. The PowerForms toolbox contains the following elements:







Button	Action
	Label. Labels identify or give directions for documenting results. Examples of labels might be Temperature or Enter All Past Surgeries and Their Dates. You can set the font type and format and apply a background color.
	Numeric. Numeric fields accept only numbers. Results such as blood pressure and heart rate are documented with numbers. Associate calculations and units of measure with numeric fields.
	Calculated Control. Calculates a new value from previously entered values; for example, body surface area, Apgar score, Glasgow Coma Scale. Calculations can be performed on numeric results and also alpha responses that have been defined to equate to numeric values.
	Conversion Control. Conversion controls enable the user to right-click and select a different unit of measurement for entering results; for example, feet and inches instead of centimeters for height. The control automatically displays the result calculated in various predefined units.
	Alpha Combo Box. Alpha combo boxes elicit one uniform response from the person completing the documentation form. The user clicks the down arrow to view a list of possible answers.
	Alpha List. The Alpha List control produces either single response options or multiple-response check boxes, depending on a properties setting.
	Free Text. The person completing the documentation can enter a free-text comment of up to # characters. This comment is itself a result, not merely a comment about another result. This option is useful for data for which a complete list is difficult to define or that is not predictable.
	Rich Text. You can associate a CCL script to pull in information from external sources to be displayed in a text box on the form. You can make the text box read-only or allow the user to enter new text or make modifications.
	Nomenclature Control. Allows for the use of nomenclature defined in CMT Maintenance Tool without listing each nomenclature item as an alpha response to point the control to a given source vocabulary defined in the CMT Maintenance Tool. This control is not to be used to enter diagnosis codes because it writes to the CLINICAL_EVENT tables, not the DIAGNOSIS table.
	Provider Selection. Allows the person completing the documentation form to search for and select a provider. The name of the selected provider is stored as a result.
	Date/Time. Allows the user to enter a date, a time, or both. The Date/Time field can default a date or be used in date and time calculations.

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	<p>Allergies. Displays active allergies obtained from the nomenclature activity records. You can add new allergies by right-clicking the button. The same allergy entry screen accessed through the Allergies tab is displayed, and the user can enter and update allergies.</p>
	<p>Image. Creates an image display box on the form section that displays an electronic image. The image is not patient-specific and is generally an illustration from reference material that exists on a network drive or on the personal computer's hard drive.</p>
	<p>Discrete Grid. Provides a dense, easy-to-use format for capturing and displaying results for multiple DTAs that have the same alpha responses. Medical history is an example of information that can be captured easily using a Discrete Grid, where responses to Cancer (and other conditions) might be No, Yes, Family, and Comment.</p>
	<p>Power Grid. Captures repetitive information for a set of related DTAs. For example, a Power grid for a wound assessment might display DTAs relating to wounds along the horizontal (x-axis). The alpha responses associated with each DTA are displayed when the person completing the documentation form clicks in a cell.</p>
	<p>Ultra Grid. Facilitates the entry and viewing of different pieces of related data similar to the Power grid. It is different from the Power grid in that primary DTAs are displayed on the horizontal axis (x-axis). Different captured information is associated with the primary DTA. For example, Active Right Range of Motion and Active Left Range of Motion might be displayed on the x-axis. On the vertical axis (y), Shoulder, Hip, and Knee might be displayed. The Ultra Grid is a set number of parameters for which you want to ask the same questions. (Compare with Power grid.)</p>
	<p>Comment. The comment control, which is associated with another input control that is already associated with a DTA, allows you to enter a comment about a related result by displaying an empty text box on the form to capture an optional comment.</p>
	<p>Medication Profile. View all the prescriptions a patient currently is taking or has taken in the past.</p>
	<p>Problem List/Diagnosis. Displays all the patients' problems that have been recorded across all encounters. The Clinical Diagnosis viewer provides an up-to-date profile of the diagnosis associated with the patient.</p>
	<p>Gestational Age Person. Allows you to capture the gestational age of a patient, the method used to calculate the gestational age, and any additional comments surrounding the gestational age.</p>
	<p>Gestational Age Encounter. Allows you to enter additional comments related to the encounter.</p>
	<p>Tracking Control. Allows you to attach a Triage Date/Time, Tracking Group, Specialty, Reason for Visit, Tracking Registration Status, Tracking Acuity, or Family Present data field to a patient from in the PowerForm. This then updates the tracking lists, eliminating the need to set any of these fields separately in the tracking lists.</p>

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	<p>CareNet Form Control. Displays all events in a Started or Requested status. By clicking the Set Event button, the Set Events window opens from <i>FirstNet</i>. You then can complete, request, or start any of the events available to you. This updates the <i>FirstNet</i> tracking lists, eliminating the need to set the events separately on the tracking lists after you finish documenting. The information you set in your CareNet Form control is displayed in the flowsheet on the patient chart. The status of the last event set is displayed in the section (Event Set) of Event Tracking. All other data entered through the controls, such as acuity, specialty, and so on, is displayed on the tracking lists. All event information entered through the CareNet controls and the Tracking Controls is stored on the tracking tables (TRACK_EVENT and TRACKING_EVENT) and on the clinical event tables.</p>
	<p>Family History Control. To view, update, and add family history information.</p>
	<p>Procedure History Control. To view, update, and add procedure history information.</p>
	<p>Pregnancy History Control. To view, update, and add pregnancy history information.</p>
	<p>Past Medical History Control. To view, update, and add past medical history information.</p>
	<p>Medication List History Control. To view, update, and add medication list history information.</p>

Creating a Section using PowerForms

1. From the Section menu, select New – New Section dialog box opens.
2. Enter the name of the Section in the Section Name box. This name is displayed on the PowerForm navigator to the left of the PowerForm when documenting.
3. In the Section Display box, enter the section title you want the user to see in the PowerForm Navigator on the left side of the PowerForm. Example, Tobacco Use Assessment
4. Click OK.

Step 4: Add a Section to a PowerForm


1. From DCP Tools launch pad, open the Documentation Management node. Double-click PowerForms to open the PowerForms window.
2. From the Form menu, select Open, or click .
3. Find and Select the form for which you want to add a section too and Double-click it.
4. The form Opens.
5. Click Add New Section in the section Navigator or click . The Section Name – Add Section dialog box opens.
6. Select the form section you want to add from the list displayed and click OK. The previous window opens showing the selected section.
7. From the Form menu, select Save, or click .

To create a label:

1. Open PowerForms and open the PowerForm Section you wish to add to.
2. If the system does not display the toolbox, select Toolbox from the View menu


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3. Drag the Label icon  to its approximate position on the form section. The system displays a box with some text in it as a placeholder.
4. Right-click the label box and select Properties to open the Label Properties dialog box and define these parameters:
 - A. On the Caption tab, enter the label text. You are limited to 255 characters.
 - B. On the Font tab, set the text alignment, background color, and font size and type.
 - C. On the Position tab, you can enter absolute values representing the exact position and size of the label box. You may want to wait until you have added all your labels and controls before doing this to add uniformity.
5. Click OK to save your changes and close the Properties dialog box.
6. Position the pointer over the border of the label until it changes into a two-headed arrow if you want to resize the label by dragging its borders. A vertical arrow sizes the box vertically; a horizontal arrow sizes the box horizontally; a diagonal arrow sizes the box both vertically and horizontally.
7. Point to the middle of a label to drag it to another location on the form section.
8. Fine-tune the appearance of labels so they are consistent.
9. To save your changes, select Save from the Section menu.

To create an alpha-response combo box:

Note: Alpha-response combo boxes are drop down boxes that are only single select. Use these if space is limited on the PowerForm and there will be only one answer.


1. Open PowerForms and open the PowerForm Section you wish to add to.
2. If the toolbox is not displayed, select Toolbox from the View menu.
3. Drag the Alpha Combo Box icon  to its approximate position on the form section. The system displays an empty box with an arrow as a placeholder.
4. Right-click the box and select Properties to open the Alpha Combo Box Properties dialog box to define these parameters on the Task Assay tab:
 - A. Click Select DTA to look up the appropriate discrete task assay (DTA).
 - B. Select the Required Field check box to indicate that the element is required. The person performing the documentation must complete all required elements in order to complete the documentation task.
 - C. Select the Allow Free Text check box if you want one of the alpha responses to be Other. The person documenting with this value is requested to enter a free-text explanation for this choice.
 - D. Select the Sort Alphabetically check box if you want the list of alpha responses displayed when the user clicks the down arrow to be in alphabetic order.
5. Click the Default Type tab to select one of these options:
 - A. No default value: The form initially displays this element as blank.
 - B. Default from reference range: The element displays a value from the reference range associated with this element's DTA. Default values are defined in DTA Wizard.

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- C. Default from last charted value: From Any encounter: When selected, this displays the last charted value for the selected DTA, regardless of the encounter that the result was documented against. A look back time limit can be imposed if you have entered a value in the Minutes column of Reference Ranges in DTA Wizard.
 - D. Default from last charted value: From encounter being Documented. When selected, this option displays the last charted value for the selected DTA from the encounter that the user is currently documenting on. A look back time limit can be imposed if you have entered a value in the Minutes column of Reference Ranges in DTA Wizard.
6. Click the Comment tab to enter the description of the comment control if you have created a comment element to be associated with this result.
 7. Click the Position tab to size and position the element appropriately.
 8. If the element you are creating is to remain inactive unless a certain conditional response is made to another element in this same section, associate a conditional control with this element.
 9. Click OK to save your changes and close the Properties dialog box.
 10. Save your changes by selecting Save from the Section menu.

To create a single-alpha response or multi-alpha response option buttons:

1. Open PowerForms and open the PowerForm Section you wish to add to.
2. If the toolbox is not displayed, select Toolbox from the View menu.
3. Drag and drop Alpha List  to its approximate position on the form section. A box is displayed as a placeholder.
4. Right-click the box and select Properties. The Alpha List Properties dialog box opens.
5. Define the following parameters on the Task Assay tab:
 - A. Click Select DTA to look up the appropriate DTA. You may have to change the Result Type to Alpha or Multi to show the appropriate DTA.

Result Types Available	
Alpha	Numeric
Calculation	On-line Code Set
Date	Provider
Date and Time	Text
Free text	Time
Multi	

- B. Select the Required Field check box if applicable to indicate that a field is required. The user performing the documentation must complete all required fields in order to complete the documentation task.

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6. Click the Default Type tab to select one of these options:
 - A. No Default Value: The form initially shows this field as blank.
 - B. Default from Reference Range: The field displays a value from the reference range associated with this field's discrete task assay (DTA). Default values are defined in DTA Wizard.
 - C. Default from Last Charted Value – From Any Encounter: When selected, this option displays the last charted value for the selected DTA, regardless of the encounter that the result was documented against. A lookback time limit can be imposed if you entered a value in the Minutes column of Reference Ranges in DTA Wizard.
 - D. Default from Last Charted Value – From Encounter Being Documented: When selected, this option displays the last charted value for the selected DTA from the encounter that the user is currently documenting. A lookback time limit can be imposed if you entered a value in the Minutes column of Reference Ranges in DTA Wizard.
 - E. se Interpretation: If an interpretation has been created for the DTA in DB Interpretation Tool (InterpretationTool.exe or opened from BBDBTools.exe), you can associate the field with the interpretation. An interpretation takes a series of alphabetic responses and evaluates them collectively to supply a single codified response. For example, the person completing a cancer staging form may be required to enter a series of alphabetic responses. The last field may be linked to a predefined interpretation to calculate the appropriate classification.
7. Click the Alpha List tab to set the following parameters:
 - A. Indicate which display item from the Nomenclature table you want displayed as the response: the mnemonic, the short string, or the source string.
 - B. Do not select the Multiple Select check box. (This creates multi-alpha check boxes instead of single-select option buttons.)
 - C. Select the Free-Text check box if you want the choice Other to be one of the available responses. This selection causes a text box to be displayed where a user can enter a free-text explanation.
8. Click the Comment tab to enter the description of the comment control, if you have created a comment field to be associated with this result.
9. Click the Position tab to size and position the field appropriately.
10. If the field you are creating is to remain inactive unless a certain conditional response is made to another field on this same section, associate a conditional control with this field.
11. From the Section menu, click Save.

Notes for single and multi-alphabetic responses:

1. Discrete task assays (DTAs) can be defined as single-select or multi-select at the time they are configured. Though PowerForms allow the person creating a form to override this definition (Alpha List control can be set to allow single or multiple responses by a property setting), it is good design practice to build DTAs and to consistently use them one way.
2. Both the single-alpha response option buttons and the alpha-response combo box elicit one and only one answer from the user. Option buttons are easier to understand than combo box lists, but they require more display space.

To create a date and time field:

1. Open PowerForms and open the PowerForm Section you wish to add to.
2. If the toolbox is not displayed, select Toolbox from the View menu.
3. Drag and drop the Date/Time icon to its approximate position on the form section. An empty box with an arrow menu is displayed as a placeholder.
4. Right-click the box and select Properties to open the Date/Time Box Properties dialog box to define the following parameters on the Task Assay tab:
 - A. Click Select DTA to look up the appropriate DTA. You may have to change the Result Type to “Date” or “Date and Time” to find the correct DTA.
 - B. Select the Required Field check box if applicable to indicate that the field is required. The person performing the documentation must complete all required fields in order to complete the documentation task.
5. Click the Default Type tab to select one of the following options:
 - A. No Default Value: The form initially shows this field as blank.
 - B. Default from Last Charted Value - From Any Encounter: When selected, this will display the last charted value for the selected DTA, regardless of the encounter that the result was documented against. A lookback time limit can be imposed if you have entered a value in the Minutes column of Reference Ranges in DTA Wizard.
 - C. Default from Last Charted Value - From Encounter Being Documented: When selected, this displays the last charted value for the selected DTA from the encounter that the user is currently documenting on. A lookback time limit can be imposed if you have entered a value in the Minutes column of Reference Ranges in DTA Wizard.
 - D. Default to Current Date/Time: The field displays the current date and time.
6. Click the Type tab to indicate which format the field is to display:
 - A. Select Date/Time if you want the field to display both the date and the time of day.
 - B. Select Date if you want only the Date box to be displayed.
 - C. Select Time if you want only the Time box to be displayed.
 - D. Select Date/Time/Time zone if you want the field to display the date, the time of day and the Time zone also.
7. Click the Comment tab to enter the description of the comment control, if you have created a comment field to be associated with this result.
8. If the field you are creating is to remain inactive unless a certain conditional response is made to another field on this same section, associate a conditional control with this field.
9. If the date and time field is to be used in a calculation, click the Calculation tab to set the following parameters:
 - A. Click Select DTA to look up the DTA associated with the other date field used in the calculation.

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- B. Select the appropriate Operator option: Add if you want time added to the other date field or Subtract if you want time subtracted from the other date field.
- C. In the Offset Value box, enter a value representing time.
- D. In the Offset Unit box, select a unit of time measurement to go with the value you entered above. For example, if the date field you are creating is to be populated with a date that is nine months later than the date field whose DTA you entered above, select Add, enter 9, and select months.
- E. Click the Position tab to size and position the field appropriately.
- F. Click OK to save your changes and close the Properties dialog box.

12. To save your changes, select Save from the Section menu.



C3I Site Leaders



Clinical Personnel

Workflow MPages

Workflow MPages help clinicians move through common workflows quickly and efficiently. For C3I, MPages can be used by clinicians and tobacco treatment specialists to efficiently “navigate” through their workflow. MPages facilitates tracking and documenting every component of the tobacco cessation treatment intervention.

The **Cerner EHR System** contains several pre-existing MPage templates designed to facilitate clinical workflow for particular activities (e.g., Summary MPage, Oncology Staging MPage). You can customize these templates by adding MPage components to suit your organization’s needs. For example, the Workflow Social MPage component displays various clinical

results and PowerForms that for the patient. The Results section of the component displays relevant clinical results.

There is an interactive **Workflow Oncology Staging MPages** component that provides the ability to capture data from pathology and radiology reports and automatically calculate the stage of cancer.

Cerner recommends starting with these pre-existing MPage templates and adding components as needed to meet the needs of your organization or clinician workflows regarding smoking cessation treatment interventions.

MPage, accessed from PowerChart, SurgiNet, and FirstNet, allows creation of custom workflows and grouping of components to be displayed on one page. Workflow MPage helps guide clinicians through their workflow.

Workflow MPage facilitates patient chart review, placing orders, and documenting data. This streamlined workflow allows for greater efficiency and increased productivity. Workflow MPage views are available for individual patients and include key patient data. In addition, it can be used to communicate information and comments between clinicians.

Clinical IT Build Template

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C3I Site Leaders



Clinical Personnel

Key features of Workflow MPages

1. There is a standard library of components available for you to configure and organize into localized views and Viewpoints.
2. It is interactive and gives visually rich views with real-time clinical information to provide important context when navigating from various areas of the patient's electronic medical record.
3. Many clinical actions can be initiated directly from the view, which decreases the number of clicks clinicians have to make and reduces navigation barriers.
4. You can customize your views and content within components. This presents information at the appropriate point of care during the workflow.
5. Organizer-level and chart-level views can be built to meet the needs of specific roles, venues, and conditions in your system.



C3I Site Leaders



Clinical Personnel

Access Workflow MPages

To confirm that the Workflow MPage presents information when needed during a clinical intervention:

1. Log into PowerChart and enter the chart of a patient that is 18 or over AND has a documented tobacco smoker diagnosis OR has an active medication order for Nicotine Replacement Therapy or varenicline OR has a qualifying smoking status at last contact.
2. Among your activities, you should now be able to see and enter your Workflow MPage.



C3I Site Leaders



Clinical Personnel



IT Personnel

Cerner Discern Expert Alerts / Rules

Discern Alert Rule Build for Internal Referrals, External Referrals, and Medication Orders

Discern Expert Alert Rules in combination with PowerPlans prompt and guide clinicians in providing specific treatments based on a patient's characteristics. They serve as an automated alert that the patient warrants a particular clinical intervention (such as colonoscopy for patients over age 50, flu vaccine, etc.). As part of the C3I program, alerts can be built to notify clinicians about a patient is a smoker. This in turn can initiate a tobacco cessation treatment intervention, including advice to quit, prescribing cessation medications, and referrals to smoking treatment resources

that are components of the C3I program.

The Discern Alert and/or PowerPlan will appear when the clinician opens the patient's record and the patient has been documented as a current smoker.

Typically, the Discern Alert prompts the clinician to ask whether the patient is interested in quitting. If so, tobacco cessation medication(s) can be ordered, a patient can be referred to an internal Tobacco Treatment Specialist (TTS), and/or a patient can be referred to the state tobacco quitline, and/or SmokefreeTXT based upon the C3I tobacco cessation components.



IT Personnel

Discern Expert Alerts/Rules Build

Order-specific Order Entry Format

1. All orders need to be included in the PowerPlan
2. All Reference Text needed
3. All Patient Education needed
4. A PowerPlan – Plan of Care
5. A Discern Rule
 - A. Evoke Action “event to trigger rule”
 - B. Logic “Where data is evaluated and bulk of module build is contained”
 - C. Action “Where you define what action a rule should perform”



IT Personnel

Order Entry Format Build for Procedure Orders

Applies to a procedure order, regardless if it is an external or internal referral order.

To create a new Order an Order Entry Format (OEF) is required for the Order. The OEF contains the order details necessary to sign an order. Order Action options indicate the type of order that triggers the use of a specific order entry format (OEF) from the Order Entry Format Tool.

Available Order Actions

Order Action	Definition
Cancel	The OEF used when a Cancel action is taken.
Discharge Order	The OEF used when a Discharge action is taken.
Discontinue	The OEF used when a Discontinue action is taken.
History	Not functional in applications - the Discharge OEF is used for historical meds.
Order	The OEF used when you place an order.
Resume	The OEF used when a Resume action is taken.
Suspend	The OEF used when a Suspend action is taken.
Void	The OEF is used when a Void action is taken.

To add an Order Entry Format (OEF):

1. From DCP Tools, click Order Management. Double-click Order Entry Format Tool.
2. Click Formats in the Order Entry format Tool main dialog box.
3. In the Formats dialog box, click Add.
4. In the Add Format dialog box, enter the required information.
5. Complete one of the following tasks:
 - A. To create a new format based on an existing format, select the Copy Another Format option, from the list select an existing format, and click OK. Modify the field details in the copied format as needed.
 - B. To create a completely new format, click OK. You are now ready to add fields to the format.
6. Changes are saved, and the Add Format dialog box is closed.

Clinical IT Build Template

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To add a field to an Order Entry Format (OEF):

Note: By default, the system sorts the list of formats alphabetically, by name. To re-sort the formats, click the Format Name or the Catalog Type bar.

1. Click Formats in the Order Entry Format Tool main dialog box.
2. In the Formats dialog box, select the order entry format to which you want to add the field and click Format Fields.
3. In the Order Actions dialog box, select an Order Action option and click OK.
4. Order Action options indicate the type of order action that triggers the use of a specific order entry format (OEF) from Order Entry Format Tool.
5. In the Format Fields dialog box, click Add.
6. In the Format Field Details dialog box, select an available value for the Field Description detail. This represents a field already added to the system.
7. Order Entry Format Tool uses field details to define order entry fields. The types of details displayed in the Field Details dialog box are described below.

Field Details	Description
Prompt	<p>Prompts the user to enter additional information when completing an OEF for a particular orderable item. The system associates a prompt with orderable items at the discrete task assay level. Select both the Prompt option and the type of prompt to be displayed during the order process.</p> <p>Note: Alpha prompts are available along with the other prompt types.</p>
Field Description	Indicates the name of the field being added or modified.
Catalog Type	Indicates the catalog type associated to the field. A catalog type represents a major division of the Order Catalog and is not synonymous with a department.
Event Code	Allows you to associate an event code for a result to the field. Click Event Code to display the Result Hierarchy Browser dialog box, locate the event code in the tree, and click OK. During the order process, the system displays in the OEF the most recent results associated to the selected event code.
Field Type	<p>Indicates the type of data considered valid by the field.</p> <p>Note: A Priority field must have a field type of List.</p> <p>A field with a field type of Physician/Provider can accept alphanumeric data as a default value.</p>
Meaning	Indicates the meaning the system associates to the field.
Accept Size	Indicates the maximum number of characters that can be entered in the field during the order process.

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Help Context	Not used in current version of Order Entry Format Tool.
Spin Increment	Indicates the number by which the value of a spin control is incremented during the order process.
Validation Type	Indicates the type of data used to validate the field content during the order process. Possible values are listed below. None: Field content is not validated. Code Set: Field content is validated based on the code set indicated in the Code Set detail. Note: A Priority field must have a validation type of Code Set. Numeric Range: Field content is validated based on the numeric range established using the Minimum Value and Maximum value details.
Code Set	Contains the number of the code set to be used for field content validation.
Minimum Value	Contains the minimum value of a numeric range to be used for field content validation. The minimum value must be less than the maximum value.
Maximum Value	Contains the maximum value of a numeric range to be used for field content validation. The maximum value must be greater than the minimum value.
Hide From Common Order Details Window	Indicates whether the system displays the field in the Common Details window when you make updates to a batch of orders having common order details.
Allow Multiple Occurrences of Field	Indicates whether the system allows you to enter a value for the Maximum Number of Occurrences for Field detail in the Format Field Details dialog box when you customize field details.
Make Field As Wide As the Window	Indicates whether the system restricts the width of the field during the order process.
Enable Interface Mapping	Indicates whether the system can map the field to various interfaces in different Cerner solutions.

8. Complete the applicable field details.
9. Click OK. Your changes are saved and the Format Field Details dialog box is closed.

You can arrange the order in which fields are displayed in an order entry format (OEF). By default, the system arranges the fields based on the order in which you add them to the format, displaying the field added first in the upper-left corner, followed by the field added second, etc. The system automatically increases the group sequence number as you add each field.

To determine/change the order in which fields are displayed, modify the Group and Field sequence details for the field.

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To modify field details in an Order Entry Format (OEF), complete the following steps:


1. Click Formats in the Order Entry Format Tool main dialog box.
2. In the Formats dialog box, select a format and click Format Fields.
3. In the Order Actions dialog box, select an Order Action option and click OK.
4. In the Format Fields dialog box, select the field you want to modify and click Field Details.
5. In the Format Field Details dialog box, modify the appropriate field details. You will need to modify the Sequences field to indicate the order in which the system will display the fields in the OEF.
6. Click OK. The system saves your changes and closes the Field Details dialog box.



IT Personnel

Cerner Order Catalog Build

To build an order in the Order Catalog tool.

1. Open DCPTools and click Order Management.
2. Double-click Order Catalog Tool to open the Order Catalog window.
Note: To copy the format of an existing order to build a new one click “Copy From” in the lower part of the window.
3. Select a Catalog type. We recommend using your currently build catalog types for the types of orders you are creating. Example: Referral orders use the Referral Catalog type.
4. Select an activity type. We recommend using your currently build Activity types for the types of orders you are creating. Example: Referral orders use the Referral Activity type.
5. Enter an activity subtype, if applicable.
6. In the Synonym tab, enter an order entry
7. Enter a description for the new orderable item, and click the Synonym tab. The description you entered now is displayed in the Primary Synonym box.
8. In the Synonyms tab, you can define additional synonyms for the orderable item.
9. In the Synonyms tab, you can also define parameters for checking for duplicate orders.
10. In the Order Review tab, indicate whether orders for this orderable item are subject to nurse or physician review.
11. Indicate various miscellaneous instructions to govern the execution of orders for this orderable item.
12. Enter the text of an order comment template. The order comment template is displayed when the user enters an order for this orderable item.
13. Click Apply to save your changes. A message is displayed if you have duplicated an existing orderable item; duplicates are not permitted.
14. From the Task menu, select Exit or click  to close the window and return to the launch pad.

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C3I Site Leaders



Clinical Personnel



IT Personnel

Cerner PowerPlan Build Option

Cerner's **PowerPlans** and **Orders** functionality facilitates the connection of patients to internal or external resources that, in C3I, are intended to assist the patient in quitting smoking. These resources include referring the patient to other clinicians who treat smoking cessation within the health system or to external services (state tobacco quitline eReferral or NCI's SmokeFreeTXT). While medication orders fall into the general orders category, the medication

order build is handled separately by the pharmacy and orders team and is not discussed in this document.

For care continuity and follow-up, after a **Referral Order** is placed to an outside service (e.g., the state tobacco Quitline), it is best practice that the referring clinician is alerted to the service outcome of the referral (**Referral Order Result**) to "close the loop."

Place an Order – Instructions for Clinicians

The general workflow for a clinician to place an order:

1. Enter patient's chart.
2. Navigate to the Orders tab and review the patient's Active Orders and OrderHistory.
3. Click the Add Order button. The Add Order window opens.
4. In the Search field enter the name of your order, referral or PowerPlan.
5. Review and complete all Order Entry details and required documentation.
6. Sign your order.

If you identify new orders that need to exist in your system, be sure to work with your Orders team to ensure proper approval and build processes are followed.



C3I Site Leaders



Clinical Personnel

PowerPlan "Plan of Care"

PowerPlan "Plans of Care" are collections of orders and clinical content that support a set of frequently used clinical activities. Defining and programing a set of specific clinical activities expedites multiple steps in routine and frequently used clinical interventions. For C3I, one common activity is prescribing medications for smoking cessation. By building a PowerPlan for these medications, the clinician can rapidly choose which drug to prescribe with appropriate information, such as dosing, length of treatment, etc. Clinicians can select PowerPlans from within MPage component sections, as well as from the Add Orders activity.

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PowerPlans can be built for both the inpatient and outpatient settings to guide both the ordering and/or documenting of a variety of clinical content, including:

1. Immunizations
2. Diagnoses and chief complaints
3. Levels of service
4. SmartTexts
5. Dispositions
6. ED dispositions
7. Follow-up information



IT Personnel

Discern Expert Alert/Rules Overview

This overview applies to external referrals, internal referrals, and medication orders.

Discern Expert is used to build the rules needed to fire Alerts and Suggested PowerPlans. These rules are built in an “If-Then” format. These rules work in three steps.

1. **Step 1** is an event that triggers the system that starts the Discern Expert evaluation. An Example event could be charting patient is a “Current Smoker”.
2. **Step 2** is evaluating patient information such as age, gender, or current location (referred to as the "if"). The patient must meet these requirements for the rule to continue.
3. **Step 3** is the rule performing one or more actions (referred to as the "then"). This can include placing a referral order or suggesting a Smoking Cessation PowerPlan, sending a message, or generating an interactive alert to the user.

Several Cerner Millennium products (for example, Anatomic Pathology, Outreach Services, PowerChart) use Discern Expert functionality to provide product-specific decision making. These product groups write events and templates designed for general use within their product only. Contact these groups for questions specific to their functionality.

Discern Expert template prefixes

Template Prefix	Group	Template Prefix	Group
AP	Anatomic Pathology	MB	Microbiology
CPS	PowerChart Office	PCA	Discern Analytics
CSM	Outreach Services	PCS	General Laboratory
CT	Clinical Trials	PFT	Patient Accounting
EKS	Discern Expert	PHI	PowerChart
HIM	Health Information Management	RAD	Radiology
HX	PowerChart Office	SN	SurgiNet

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Building a Rule has three elements.

1. **EVOKE.** What event triggers the module to begin evaluation?
2. **LOGIC.** Evaluation of data to determine if the patient meets specific criteria.
3. **ACTION.** This specifies where the rule performs one or more actions.

The Evoke section is where you define the event from which the module begins.

This is a front-end workflow that a user performs to start the *Discern Expert* evaluation. All *Discern Expert* events can be placed into two categories: synchronous and asynchronous.

Synchronous events which display an alert are triggered within a clinician's/user's workflow. These events call the *Discern Expert* (CPM.EKS) server (SCP 175) and wait for a reply. The server must process all modules before allowing the application to continue. For example, the ADDTOSCRATCHPAD event is triggered when orders are added to the scratch pad. The user's workflow temporarily pauses while the *Discern Expert* server processes all rules with this event. Since this event occurs during the workflow, alerts can be displayed to users, and orders can be prevented from being added to the scratch pad and, ultimately, committed to the database.

Asynchronous events are triggered when the database is updated. These events perform in the background and do not interrupt the workflow. Once the database is updated, the server that handled that request passes the request to the CPM Process server (SCP 55). This server determines the appropriate EKS_ASYNC_* server (SCPs 150, 151, 152, and 153) and passes the request to it. From there, the EKS_ASYNC_* server processes all modules with that event. While this is happening, the clinician/user is proceeding with their clinical workflow. For example, ORDER_EVENT is triggered when an order is placed, or an existing order is modified. Once the database is updated, the Orders server sends the request to the CPM Process server, determines if the EKS_ASYNC_02 server (SCP 151) is the appropriate server, and passes the request. The EKS_ASYNC_02 server then processes all modules with this event and performs any qualifying actions. Even if the clinician/user closes a patient's chart, actions such as sending a message or creating a result continue to perform.

Once an event is selected, the evoke templates must be defined. Evoke templates are limited, as they can only read incoming requests and cannot query the database. Newer templates follow a standard naming convention. Evoke templates end with *_E. Template options depend on the event selected.

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Asynchronous Events

Event	Event Is Triggered
ALLERGY_EVENT	When an allergy is added or updated
BB_RESULT_EVENT	When results are entered in Blood Bank
CLINICAL_EVENT	When information is inserted or updated on the CLINICAL_EVENT table
COLLECTION_EVENT	When collecting specimens in the laboratory
DCP_MOD_TASK	When tasks are completed
DIAGNOSIS_EVENT	When a diagnosis is added or updated
EXPERT_EVENT	From timer rules or if using a Discern Explorer program to trigger a rule
ORDER_EVENT	When an order action is taken such as order, modify, cancel, or complete
PATIENT_EVENT	When registration events are taken such as an admission, transfer, or discharge
PROBLEM_EVENT	When a problem is added or updated
RESULT_EVENT	When laboratory results are entered

Synchronous Events

Event	Event Is Triggered
ADDTOSCRATCHPAD	When adding orders to the scratch pad
CLOSECHART	When closing charts
MEDCHARTACTIVATE	When scanning or clicking a medication in the medication administration record (MAR) or Medication Administration Wizard
OPENCHART	When opening charts
POWERPLANFLEX	When selecting a PowerPlan on a patient. Also known as Dynamic PowerPlans
SIGNORDER	When signing orders
SYNCHEVENT	From a Discern Explorer program
TOCFLEX	When opening PowerChart.

The Logic section is where data is evaluated and where the bulk of a module build is contained.

The conditions must equal **TRUE** for the rule to execute an action. Discern Expert templates can read incoming requests, query the database for additional information, query for information at the Person and Encounter levels, and search for order and clinical event information. Templates are also available for PowerPlans, laboratory results, and general information such as a clinician's/user's position or verification that a module previously fired.

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The **Action section** is where you define what action a rule should perform if it passes the **Logic section**.

The type of action depends on the event. Synchronous events should only be used to generate an alert. Since these events occur during the workflow, the alert can be configured to stop the user's workflow and prevent orders from being committed to the database. Asynchronous events have more action options, as they are performed in the background.

Action Options

Action	Front-End Change
Alerts	Generates an interactive alert to clinicians/users, potentially stopping their workflow.
Clinical Events	Adds a new clinical event or updates an existing one.
Diagnosis	Adds a new diagnosis or updates an existing one.
Discern Explorer	Executes a Discern Explorer program.
Messages	Sends messages through Discern Notification to the Message Center. It also sends messages as an email message, a web page, or a printable document.
Orders	Adds a new or updated order or cancels or discontinues an existing one.
Cerner Millennium Laboratory	Creates results, verifies performed results, or adds result comments.
PowerPlans	Suggests a PowerPlan.
Problems	Adds a new problem or updates an existing one.
Task	Adds a one-time task that is not connected to an order.

The tools needed to configure these Discern Expert Rules are the following:

1. **Discern Developer** used to build the Expert Knowledge Modules also referred to as Rules.
2. **Expert System Tool** used to perform event and server configurations.

These asynchronous and synchronous events are what determine the criteria a patient needs to meet for the Discern Expert Rule to fire in the patient's chart when the clinician is reviewing it.

Examples of the criteria records (those records which identify the patient population you want to survey) you may want to use include: Tobacco User Problem List; No Tobacco Quitline Order in Past 90 Days; Passive Smoker; Current Smoker; Age 18 Years and Older; Active medication orders for Nicotine Replacement Therapy (NRT) or varenicline.