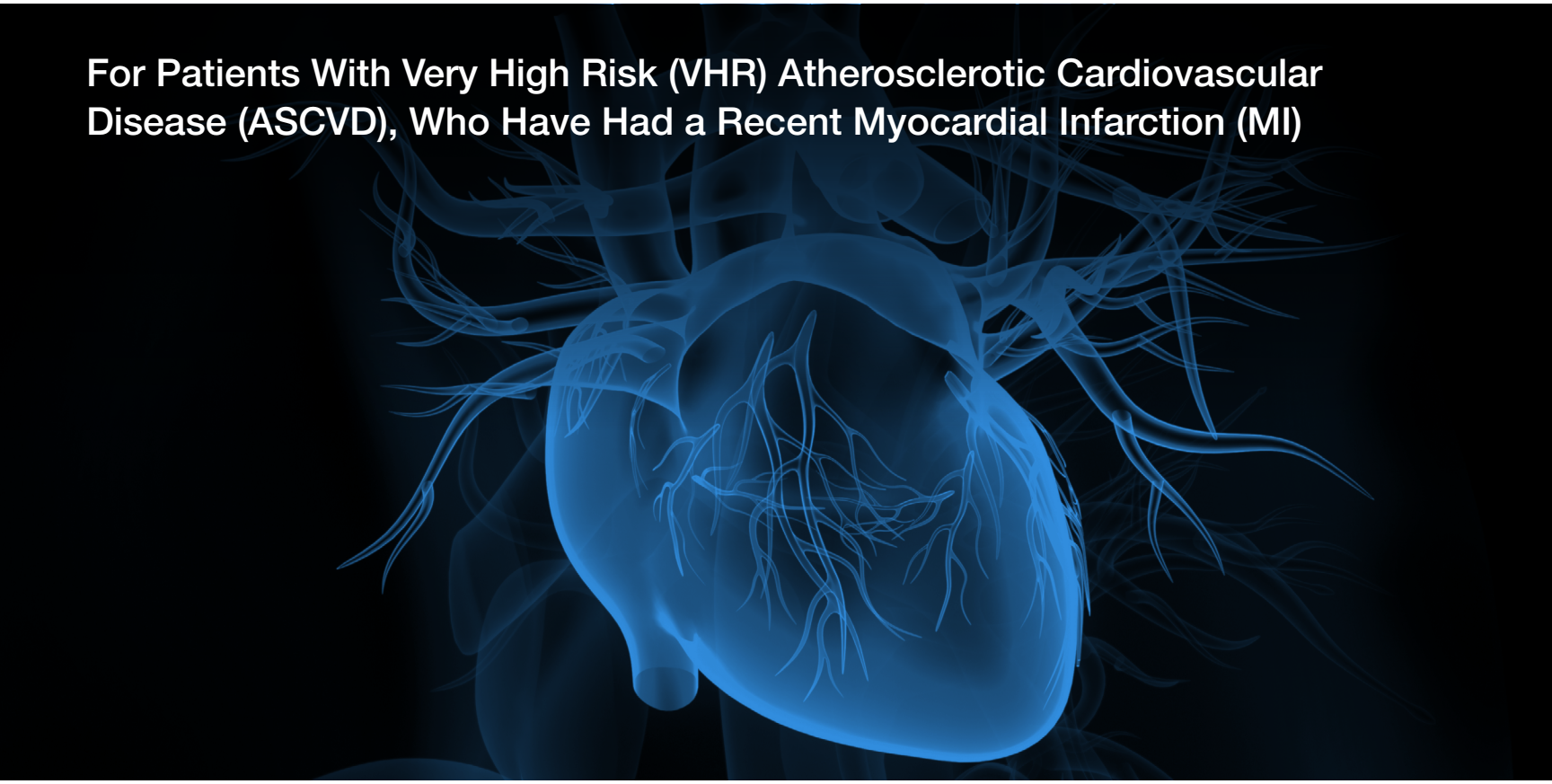
For Health Systems Using Epic®

CV RISK MANAGEMENT:
USING EHR FEATURES TO IDENTIFY, EVALUATE, AND ENGAGE PATIENTS



EHR=Electronic Health Record.

IDENTIFY

Use clinical criteria to generate Patient Reports of patients with VHR ASCVD

EVALUATE

Use BestPractice Advisories (BPAs) or Health Maintenance Reminders to alert providers to consider treatment for patients with VHR ASCVD including a recent MI

ENGAGE

Use Patient Follow-Ups and Primary Care Provider Communications to encourage patients to make appointments and engage in care

AMGEN®

Table of Contents

AMGEN®

About This Guide

Amgen has developed this EHR guide for educational purposes only, to assist health systems in configuring their Epic® capabilities to help identify very high risk atherosclerotic cardiovascular disease (VHR ASCVD) patients who have had a myocardial infarction (MI). **Amgen does not endorse specific EHR systems**.

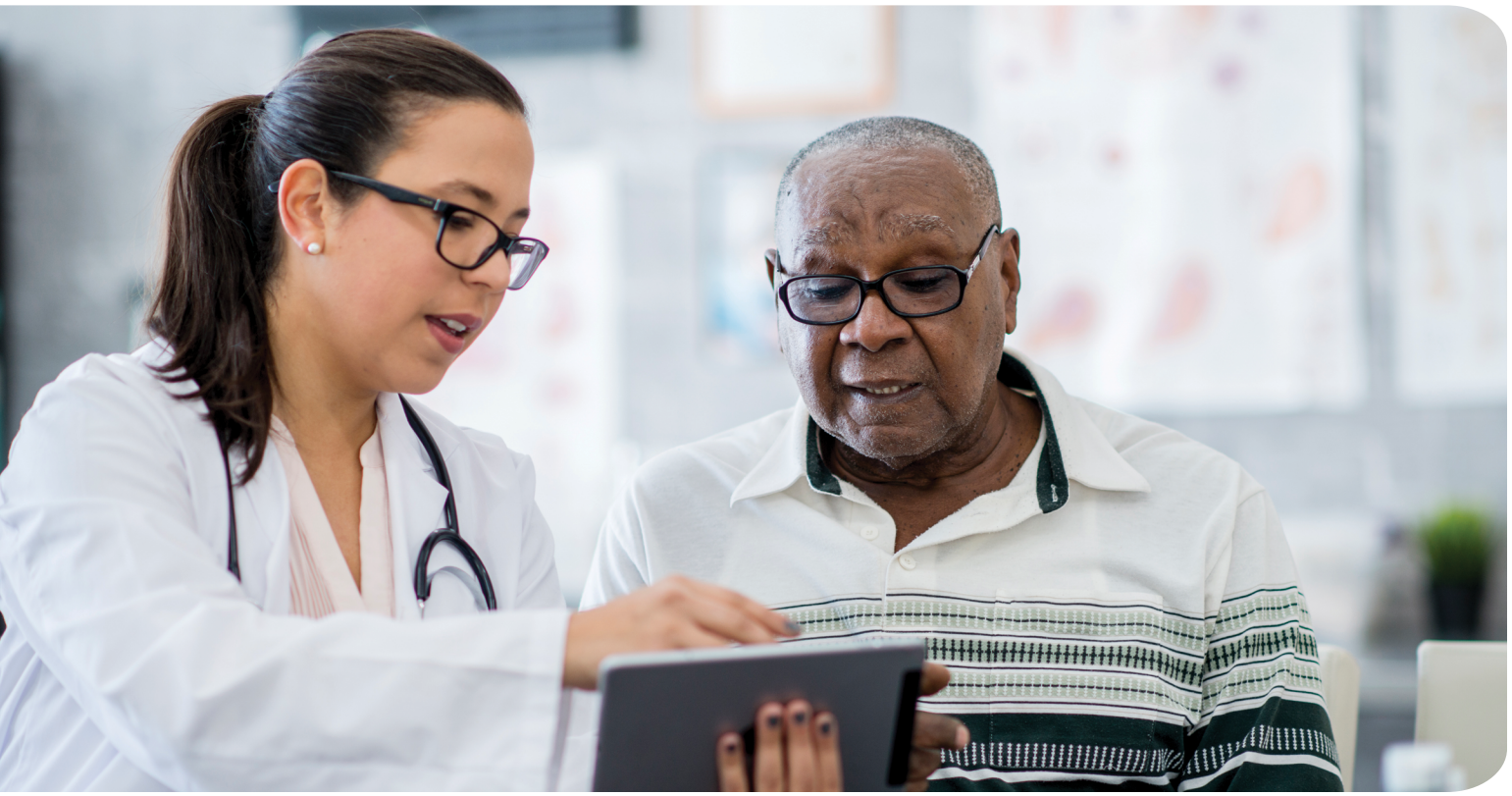
This guide provides **insights and examples to help clinical decision makers implement automated EHR functionalities** that can prompt follow-up for VHR ASCVD patients who have had an MI. It does not constitute guidance for medical advice or treatment.

The information listed in this guide is based upon the most recent version of Epic at the time of publication.

Note:

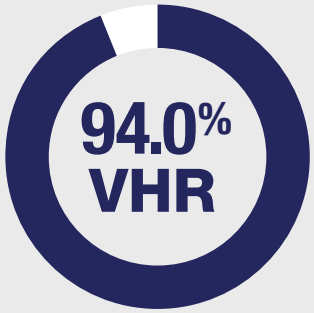
- *Functions and features may change as new software versions are released*
- *This guide is meant to serve as summary information only and should not replace detailed instructions provided to you by your internal or external EHR support resources*
- *Screen images shown within represent hypothetical screens in Epic*
- *Amgen makes no claims or warranties about the applicability or appropriateness of this information*

See Appendix A for a Glossary of Terms for Epic.

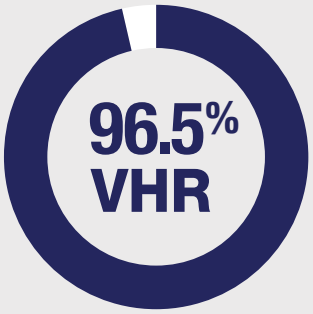


Millions of Americans Are Estimated to Have VHR ASCVD[1]

US Adults With a History of Major ASCVD Events that Meet the VHR Criteria:[2,*]



History of Any Major ASCVD Event



History of MI

2018 AHA/ACC/Multisociety Guideline Definitions of VHR ASCVD[3]

History of Multiple Major ASCVD Events	OR	A Major ASCVD Event and Multiple High-Risk Conditions

Major events include:

- Recent acute coronary syndrome (ACS), within the past 12 months
- History of myocardial infarction (MI), other than a recent ACS
- History of ischemic stroke
- Symptomatic peripheral arterial disease (PAD)

Conditions include:

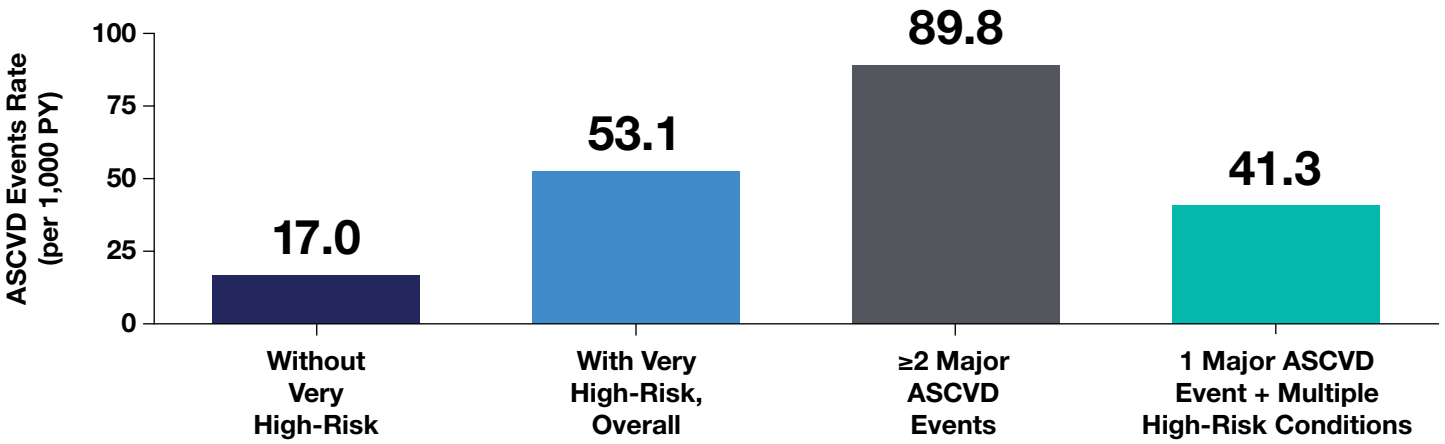
- Age ≥ 65 years
- Heterozygous familial hypercholesterolemia
- History of prior coronary artery bypass surgery or percutaneous coronary intervention outside of the major ASCVD event(s)
- Diabetes mellitus
- Hypertension
- Chronic kidney disease (eGFR 15-59 mL/min/1.73 m^2)
- Current smoking
- Persistently elevated low-density lipoprotein cholesterol (LDL-C) ≥ 100 mg/dL (≥ 2.6 mmol/L) despite maximally tolerated statin therapy and ezetimibe
- History of congestive heart failure

Note: Please refer to the related EHR Worksheet Resource for potential codes, inclusion and exclusion criteria for your consideration.

*A retrospective cohort study of adults using data from the MarketScan database (Truven Health Analytics, IBM Watson Health). Analysis was restricted to patients with a history of major ASCVD on December 31, 2015, defined according to the 2018 AHA/ACC/Multisociety guideline as a recent acute coronary syndrome, history of MI other than recent ACS, or history of ischemic stroke or symptomatic PAD. Patients were followed for their first ASCVD event including MI, ischemic stroke, or major adverse limb events with censoring occurring upon loss of health insurance benefits on December 31, 2017.[2]

Patients With VHR ASCVD Are at Higher Risk for Recurrent CV Events Compared to ASCVD Patients Without VHR[4]

Among Patients With VHR ASCVD, Those With Multiple Major ASCVD Events Had the Highest Risk of Further ASCVD Events[4,*]



The ASCVD event rate was 3 times higher among those who met the definition of VHR in the 2018 AHA/ACC/Multisociety guideline than for those who did not meet this definition.[4,*]

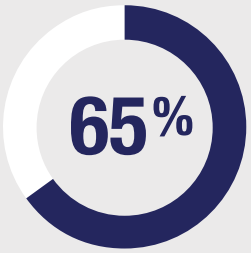
*Analysis of 27,775 US adults with a history of ASCVD from the MarketScan database (Truven Health Analytics, IBM Watson Health). A history of ASCVD was defined as a history of myocardial infarction (MI), stable angina, unstable angina; previous coronary artery bypass grafting (CABG) or percutaneous coronary intervention (PCI); ischemic stroke, transient ischemic attack, carotid endarterectomy, carotid, vertebral, or basilar stenting; peripheral artery disease (PAD); artery aneurysm, or endovascular stent graft placement. All available claims prior to January 1, 2016, were used to define very high ASCVD risk. Consistent with the 2018 AHA/ACC/Multisociety guideline, a very high ASCVD risk was defined as a history of multiple major ASCVD events or 1 major ASCVD event in addition to multiple high-risk conditions.[4]

The 2022 ACC Expert Consensus Decision Pathway Recommends Reducing CV Risk by Optimizing LDL-C Management in VHR ASCVD Patients[5]

- Per recommendations, consider addition of nonstatins to maximally-tolerated statin therapy for VHR ASCVD patients with an LDL-C level above the threshold of LDL-C ≥ 55 mg/dL or less than 50% LDL-C reduction[5,*]

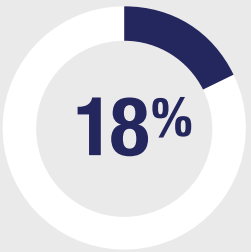
Though the Relationship Between LDL-C Reduction and CV Risk Management Is Clear, Few Patients With ASCVD Receive Adequate Treatment[6-7]

In an analysis of patient-level data in the Truven MarketScan Research Database:[1,†]



of patients with VHR ASCVD on statin therapy and/or ezetimibe had LDL-C < 55 mg/dL

Among those with VHR ASCVD, at the time of the LDL-C assessment index date:[1,†]



were receiving a high-intensity statin

weren't receiving any statin or ezetimibe

*Note that this process did not involve formal systematic reviews, grading of evidence, or synthesis of evidence. The goal was to provide practical guidance in situations not covered by the 2018 AHA/ACC/Multisociety guideline until the next round of guidelines has the opportunity to formally review recent scientific evidence.

†Study conducted using de-identified Health Insurance Portability and Accountability Act-compliant administrative healthcare claims from facilities, providers, and outpatient pharmacies from the Truven MarketScan Research Database, which contains healthcare data for more than 43.6 million covered lives. Enrollees who met all of the following criteria were included in the analytic cohort: ≥ 1 valid LDL-C measurement in 2014 (date of last measurement defined as index date), age ≥ 21 years as of the index date, continuous enrollment in the database for ≥ 5 years prior to the index date, a diagnosis of ASCVD or diabetes, or likely heterozygous familial hypercholesterolemia during the baseline period. Demographic and clinical characteristics, including comorbidities and risk factors of interest, were assessed for each disease group, along with treatment status and LDL-C. The extrapolated prevalence of ASCVD was 18.3 million (8.0% of the adult population), of which a total of 32.8% of patients with ASCVD were considered to be at very high risk according to the 2018 Guideline. A patient was assumed to be taking a medication at index if (a) the pharmacy claim date preceded the index date and the runout date was the index date or later, or (b) the pharmacy claim runout date was no later than 30 days prior to the index date. Patients who had either no pharmacy claim or had a pharmacy claim with a runout date earlier than 30 days before index were not considered to be on the medication.[1]

New Strategies May Be Needed to Lower Cardiovascular Risk for Patients With VHR ASCVD

Quality Measures Have Not Kept up With Guidelines and Recommendations for ASCVD Risk

Though clinical guidelines outline LDL-C management criteria to mitigate ASCVD risk, LDL-C levels are not prioritized by current healthcare quality performance measures[2]

Instead, quality performance measures typically focus on activities (eg, statin prescribing) and short-term outcomes (eg, 30-day readmissions) and not longer-term outcomes[8-10]

"The low proportion of patients with a history of major ASCVD events taking a high-intensity statin and ezetimibe **indicates a need for strategies to increase the initiation of, and adherence to, intensive lipid-lowering therapies…**"

– Muntner P et al., *Cardiovasc Drugs Ther* 2021[2]

EHR Capabilities Can Help Identify Undertreated ASCVD Patients for Follow-Up Evaluation and Engagement[11]

- Population health programs using EHRs can help to successfully identify very high-risk ASCVD patients and significantly improve guideline and recommended LDL-C control[11]
- Given the importance of risk reduction for VHR ASCVD patients who have had an MI, identification of these patients is key[13]

"...the EHR has the potential to automatically identify patients...(of) whom physicians might not otherwise be aware."

- Roumia M and Steinhubl S, *Curr Cardiol Rep* 2014[12]

EHR Patient Reports, BPAs, Health Maintenance Reminders, Automated Patient Follow-Ups, and Primary Care Provider Communications May Be Implemented to Help Improve Care for Patients With VHR ASCVD

IDENTIFY

Use clinical criteria to generate Patient Reports of patients potentially eligible for CV disease management

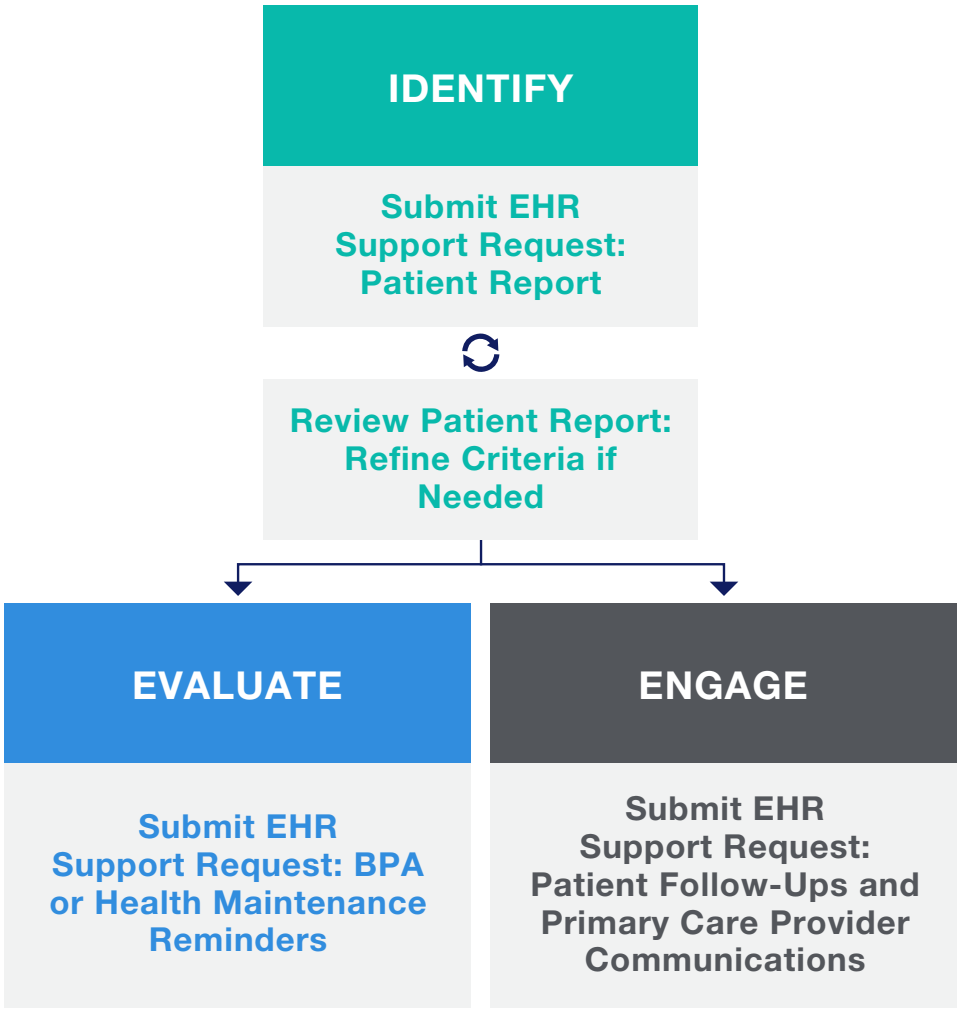
EVALUATE

Use BPAs or Health Maintenance Reminders to alert providers to consider treatment for VHR ASCVD patients who have had an MI

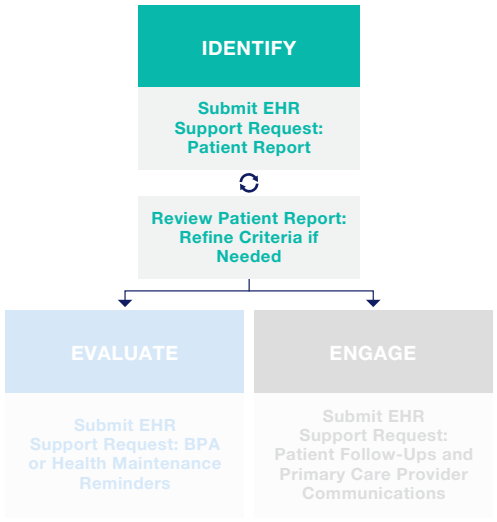
ENGAGE

Use Patient Follow-Ups and Primary Care Provider Communications to encourage patients to make appointments and engage in care

Actions for a Clinical Champion as Part of the Effort to Help VHR ASCVD Patients Prevent Recurrent CV Events



Role of Patient Reports in Identifying ASCVD Patients



Patient Reports can be used to identify patients with VHR ASCVD after they experience an MI. Once programmed, Patient Reports can be used by organizations to understand which of their patients may benefit from follow-up. Epic® also has reporting features called SlicerDicer and Reporting Workbench that enable reports with clinical criteria. You can find step-by-step instructions to run a Patient Report with Epic's SlicerDicer functionality in Appendix B of this document. Instructions for using Reporting Workbench can be found in Appendix C of this document.

To run a Patient Report, the EHR relies on clinical criteria inputs. These criteria filter the database of patients to display only those you wish to include on the Patient Report.

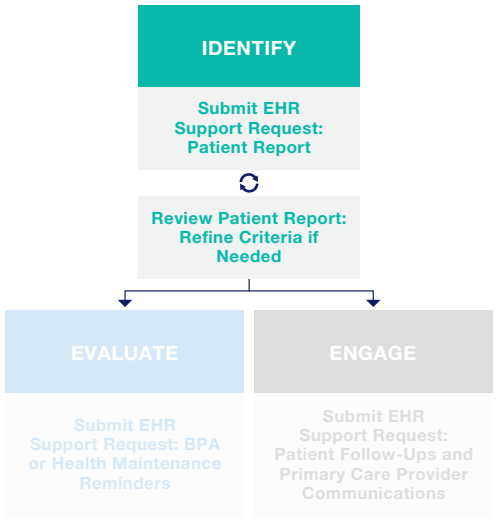
For example, the criteria in the table below may be used to identify patients with VHR ASCVD.[5] These criteria are listed as examples only. Health systems should independently choose the clinical criteria they deem appropriate to generate the Patient Reports.

Note: Both the SlicerDicer and Reporting Workbench features require appropriate permissions for access.

Example clinical criteria for patients with VHR ASCVD who may benefit from the addition of nonstatin therapy[3,5]		
Major ASCVD Event	**ICD-10 Diagnosis Code***	**Timing**
Myocardial infarction (MI)	I21	Any
Acute coronary syndrome (ACS)	I24.0	Within last 12 months
High-risk condition	**ICD-10 Diagnosis Code***	**Timing**
Diabetes	E10 or E11	Current
Hypertension	I10	Current
Laboratory tests	**Value**	**Timing**
LDL-C	LDL-C ≥ 55 mg/dL	Past 90 days
	OR	
	Missing fasting or non-fasting lipid panel	Past 12 months
Medications	**Type/dose**	**Timing**
Lipid-lowering therapy	High-intensity statin (atorvastatin 40 mg to 80 mg or rosuvastatin 20 mg to 40 mg) ± ezetimibe	At least 1 month
Interventions	**Procedure Code***	**Timing**
Percutaneous coronary intervention	92920	Any

*Codes are intended to guide provider efforts to identify patients potentially eligible for cardiovascular risk management. They are provided for reference purpose only and may not be all-inclusive. The responsibility to determine coverage and reimbursement parameters, and appropriate coding for a particular patient and/or procedure, is always the responsibility of the provider or physician.

Requesting and Implementing Patient Reports



For the Healthcare Provider

Requesting Patient Reports From the EHR Support Team

Requesting healthcare providers must provide key information for Patient Reports before the setup can be managed by the EHR support team as part of a typical process for requesting, approving, and implementing EHR changes.

The healthcare provider may then update the criteria to refine the results.

Inclusion and Exclusion Criteria for Patient Reports

Note: Please refer to the related EHR Worksheet Resource for potential inclusion and exclusion criteria for your consideration.

Step-by-step instructions for running a Patient Report in **SlicerDicer** can be found in Appendix B in this document. Instructions for using **Reporting Workbench** can be found in Appendix C.

For the EHR Support Team

In Epic®, a list of patients can be created using **Reporting Workbench,** and saved to the requester's *My Reports* folder for on-demand running or scheduling. SlicerDicer can be created and run by the user on demand and as needed. Once the Patient Report is implemented, healthcare providers can run the report and assess the results.

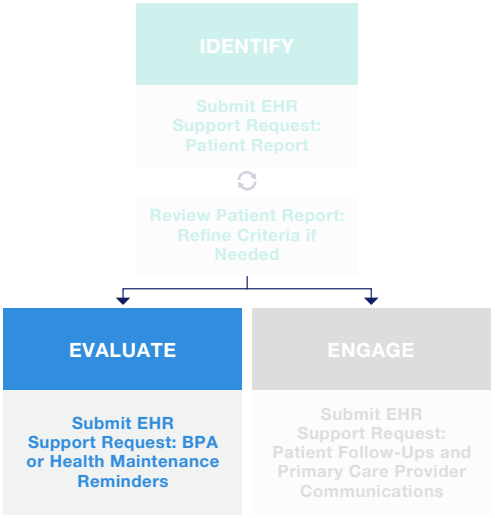
Reports

Post-MI patients with VHR ASCVD who may be appropriate for follow-up evaluation

PATIENT	AGE	SEX	LAST VISIT DATE
Buttercup, Suzzi	75	Female	10/21/2022
Violet, Larry	59	Male	03/12/2023
Rose, Sarah	68	Female	01/01/2023
Jasmine, Joy	52	Female	12/25/2022
Daffodil, Derek	62	Male	11/11/2022

Hypothetical example of a Patient Report in Reporting Workbench.

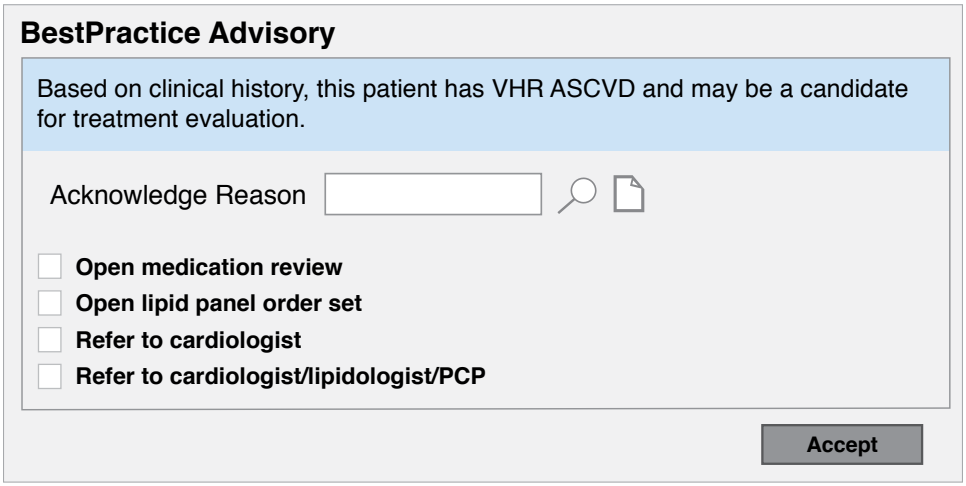
Role of Reminders



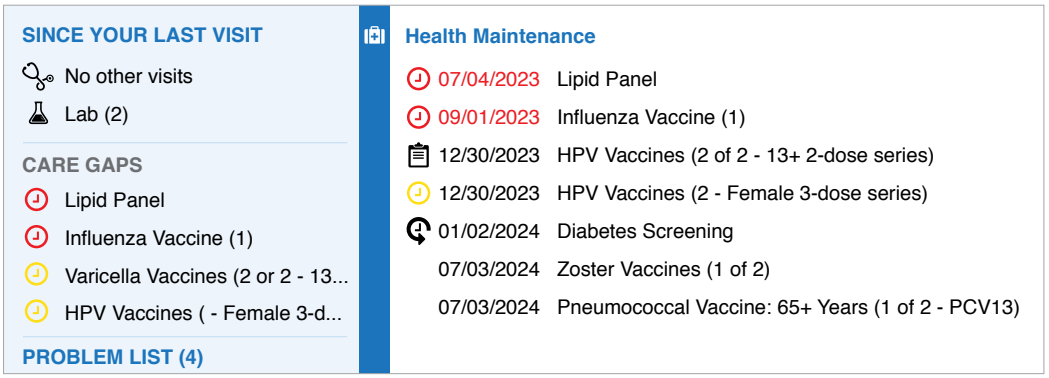
BestPractice Advisories (BPAs) are automated alerts displayed at the point of care that remind or flag providers to evaluate treatment when a patient meets specific criteria. For example, a BPA may be configured to notify providers if a patient meets the 2018 AHA/ACC/Multisociety criteria for VHR ASCVD[2] and also may benefit from the recommendations in the 2022 ACC Consensus Pathway.[5] Similarly, Health Maintenance Reminders may be used in the EHR to remind patients and staff about completed and upcoming preventive health tests and procedures.

Because they are tied to clinical criteria, BPAs are designed to prompt relevant actions. When patients meet set criteria that identifies them as possibly having VHR ASCVD, the EHR can suggest certain actions, such as medication review, ordering follow-up tests, or creating a referral for the patient. These actions are typically based on best practice care guidelines and are developed in partnership with clinical leadership at the institution.

You can find step-by-step instructions to create a **BPA** in Appendix D of this document. Instructions for setting up **Health Maintenance Reminders** can be found in Appendix E.

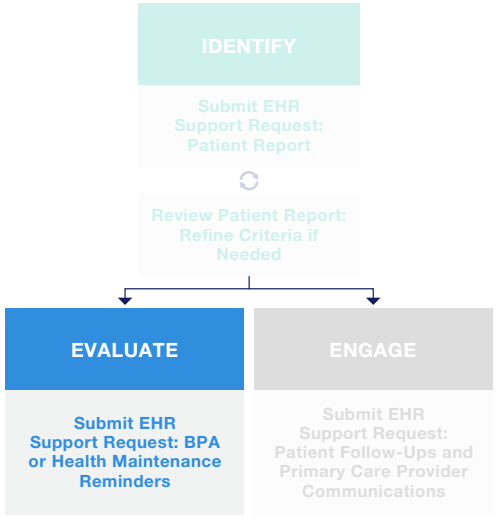


Hypothetical example of a BPA.



Hypothetical example of a Health Maintenance Reminder.

Requesting and Implementing Reminders



For the Healthcare Provider

Requesting healthcare providers or others in the health system may wish to request Reminders to help ensure follow-up for patients identified on the Patient Reports. Below are some examples of how you may decide to set up your BPAs.

Inclusion and Exclusion Criteria for BPA

Please refer to the related EHR Worksheet Resource for potential inclusion and exclusion criteria for your consideration.

For BPAs Only:

Timing for Display of BPA in the Workflow

- During Visit Navigator
- During Order Management
- When the In Basket is accessed

Display Restrictions

Display BPA for healthcare professionals and care managers.

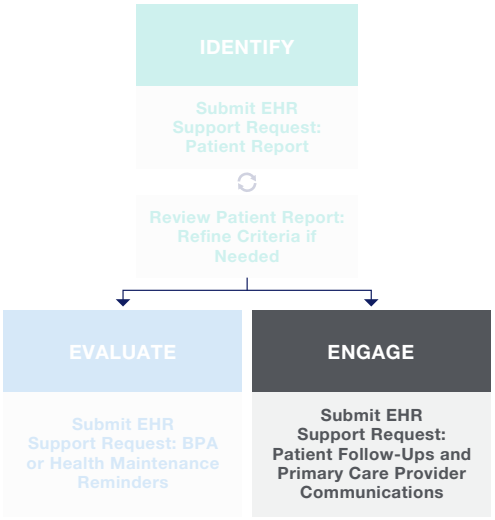
Example of Specific Language to Be Displayed in BPA

Based on clinical history, this patient has VHR ASCVD and may be a candidate for treatment evaluation.

Actions to consider based upon the BPA

- Open lipid-lowering therapy order set
- Open lipid panel order set
- Refer to cardiologist

Role of Patient Follow-Ups



Healthcare providers, or others in the health system, may request Patient Follow-Ups to communicate with patients identified on the Patient Reports. Patient Follow-Ups are letters sent either electronically via the MyChart® patient portal or by mail to all patients who meet the criteria specified in the EHR. Patient Follow-Ups can be used as the basis to proactively contact VHR ASCVD patients who have experienced an MI.

Communications to patients can indicate the reason for follow-up along with a call-to-action, such as to schedule an appointment for evaluation. They can also include supporting educational materials prior to the visit, such as information on ASCVD risk and available treatment options. These communications are then recorded in the patient's chart for reference. You can find step-by-step instructions for creating **Patient Follow-Ups** in Appendix F.

Detail | Summary

Results loaded: 55 of 55

Results shown: 5 of 5

Select All | Show All

Last BP(D)
Last CBC
✔ **ASCVD**
Phone
Last Appt With Me

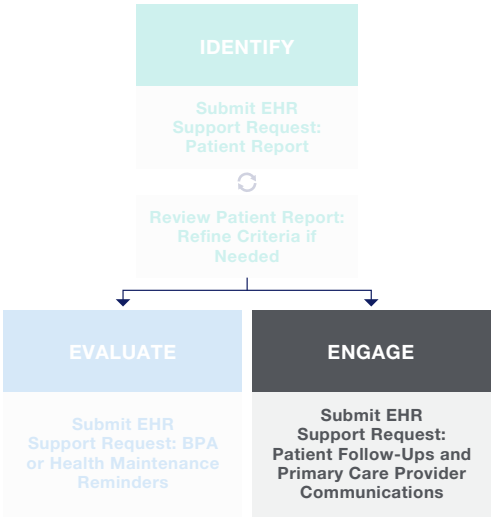
Contains:

(Blanks)
(Non-blanks)
☑ **Activated**
Not Used

Age	Sex	Diagnosis	Last Visit Date	Pt. Portal Status
52	Male	I29	9/2/2021	Activated
53	Female	I29	5/24/2021	Activated
63	Male	I29	11/6/2020	Activated
73	Female	I29	2/3/2021	Activated
57	Female	I29	8/16/2021	Activated

Hypothetical example of a Patient Follow-Up setup page.

Requesting and Implementing Patient Follow-Ups



For the Healthcare Provider

Suggested Request to the EHR Support Team: Patient Follow-Ups

Similar to the other EHR capabilities, healthcare providers must provide key information for Patient Follow-Ups before the setup can be managed by the EHR support team.

☑ Inclusion and Exclusion Criteria for Patient Follow-Ups

☑ Message Configuration

- Subject
- Message body (required field)
- Reply options
- Attachment options

Example language:

Hi [[Patient Name]]:

Know your numbers—it's important that your LDL-C is < 55 mg/dL to help manage your risk level. Preventive medicine plays an important part in your health and overall well-being. Given the risk factors and your history of cardiovascular events, you may be at an elevated risk for another event. It's important to schedule an appointment for follow-up evaluation and to discuss your heart health with your physician.

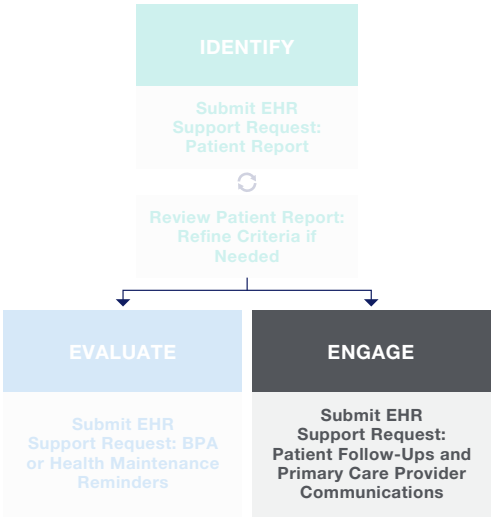
To schedule your appointment, contact your cardiologist or connect via MyChart®.

Sincerely,

[[Organization Name]]

Note: Please refer to the related EHR Worksheet Resource for potential inclusion and exclusion criteria for your consideration.

Primary Care Provider (PCP) Communications



Role of PCP Communications

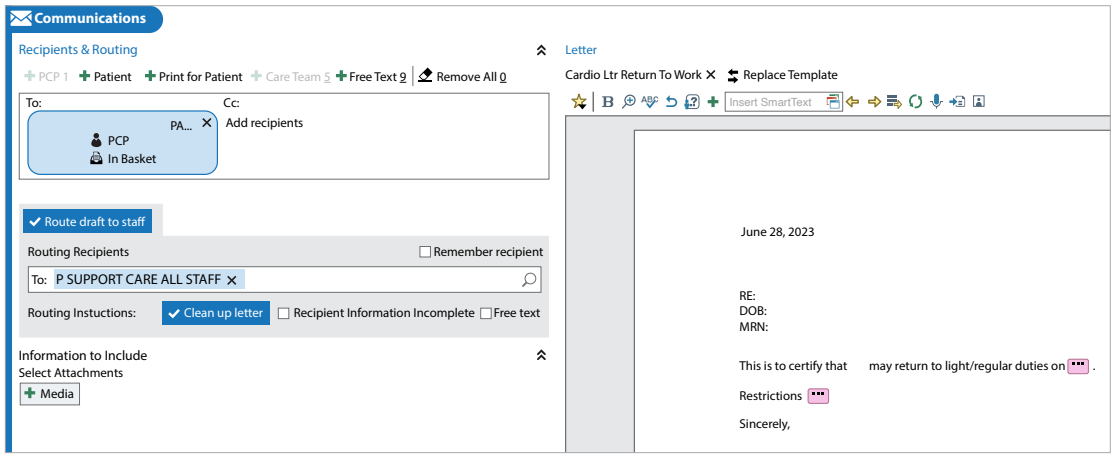
PCP Communications are used to engage and advise the identified patient's Primary Care Provider. For PCPs within the health system, the message can be sent as an In Basket letter. To reach PCPs outside of the health system, messages can be sent electronically as a Direct Message or fax. Much like a referral letter, these communications can be recorded in the patient chart.

PCP Communications can be used to proactively reach out to the identified patient's PCP as part of an organization's cardiovascular EHR improvement effort. The communication can indicate the reason for follow-up along with a call-to-action, such as to schedule an appointment or to keep providers apprised of changes to the patient's treatment plan. Discharge plans can include an option to automatically send a message and appropriate documentation to the patient's PCP.

For the Healthcare Provider

Suggested Request to the EHR Support Team: Primary Care Provider Communications

Similar to the other EHR capabilities, healthcare providers must provide key information for Primary Care Communications before the setup can be managed by the EHR support team.

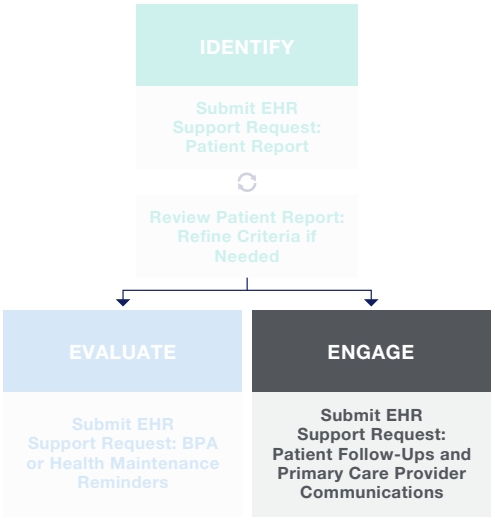


Example PCP Communications Set up from Notes section.

For the EHR Support Team

Refer to Appendix G for detailed instructions.

Primary Care Provider (PCP) Communications (cont'd)



Requesting and Implementing Primary Care Provider Communications

Clinical decision makers may consider providing the following information to their EHR support team for their use in configuring PCP Communications:

- Patients to include
- Methods of communication
- When to send and appropriate qualifier, for example, XX days after change in lipid-lowering therapy
- Message to Primary Care Provider, for example,

  [[PCP Name]]:

  Regarding: [[Patient Name]], [[DOB: DOB]]

  We saw your patient on XX/XX/XXXX and initiated a change in lipid-lowering therapy. This change was based on your patient's LDL-C levels on recent laboratory tests. For your review, we have attached pertinent information regarding their care at this facility.

  Sincerely,

  [[Facility contact information]]
- Attachments, for example, procedure notes or lab results

Dear @PCP@,
In an effort to improve communication this notification is to inform you that your patient, @NAME@, arrived in the Emergency Department on @ARRDATE@ at @ARRTIME@.
@CC@
Following the completion of the patient's treatment, you will receive two additional documents:
1. AVS (after visit summary) - This contains data pulled from our system including instructions to the patient for follow-up. The report also includes results of diagnostic studies including pending and preliminary tests that were ordered during the ED visit.

Example PCP Communications showing use of SmartPhrases.

Appendix A: Glossary of Terms

EHR Term	Definition
BestPractice Advisories	An Epic®-specific term for reminders that display in the EHR for the healthcare professional, based upon the patient meeting certain criteria.
BestPractice Care Guidelines	The clinical treatment guidelines by which the practice or health system have agreed are best practices to follow. The guidelines are the basis of BPAs and other reminders in the EHR.
Clarity	One of Epic's Analytics/Reporting tools. Requires database reporting expertise. Is utilized by the EHR support team. Typically used for large reports. Uses an offline database, updated nightly.
Clinical Champion	The person within the practice who is the "go-to" for EHR-related questions. Sometimes this person is also responsible for setup of the EHR.
EHR Support	The person or group which provides EHR technical support. This group is often responsible for the setup of or changes to the EHR.
Inclusion/Exclusion Criteria	Information that is used to determine whether a patient should or should not be included in a report, or whether a BPA should be displayed for a patient or not. Criteria include (but are not limited to) diagnosis, gender, age, lab results, medication history, and procedure history.
MyChart®	Epic's name for the patient portal. MyChart enables patients to view their clinical record, access After Visit Summaries, securely message with their provider, request appointments, refill prescriptions, and access educational materials.
My Reports	Reports that are set up in SlicerDicer, Reporting Workbench, or Clarity can be saved to a list which an EHR user can run on demand. Each user's list of reports is referred to as My Reports.
Patient Follow-Ups	Communication with patients generated from within the EHR using a variety of methods.
Patient Reports	An EHR reporting feature which enables the creation of a list of patients, based upon demographic or clinical criteria.
Reporting Workbench	One of Epic's Analytics/Reporting tools. Requires database reporting expertise. Is utilized by the EHR support team. Typically used for small/ medium reports. Uses the production database.
SlicerDicer	One of Epic's Analytics/Reporting tools. Features a user-friendly interface. Can be utilized by clinical users or EHR support team. Typically used for smaller reports. Uses the production database.

Appendix B: SlicerDicer

Users must have appropriate permissions to access SlicerDicer.

Step 1: Creating the Patient Population

1. Navigate to **Chart Search**, **SlicerDicer**.
2. Choose Data Model **Patients**.
3. Select **Browse** to search available criteria or enter a specific criterion in the search textbox.
4. Select a criterion, for example, **Diagnosis**.
5. From the Mode options, select **ICD/Grouper**.
6. Search for and select appropriate diagnoses without timeframes (from the list below or refer to the related EHR Worksheet Resource for potential inclusion and exclusion criteria for your consideration).
   A. Myocardial infarction
   B. Diabetes Type 1 and/or 2
   C. Hypertension
   D. Stroke
   E. Heart failure

   *Note: Options displaying wildcard * (asterisk) indicators allow the selection of a broad range of codes.*

Step 2: Add Criteria With Lookback Timeframes

1. From the diagnosis search, select **Acute Coronary Syndrome**, for example.
2. Select **Accept**.
3. Select **Advanced Options** ⚙ (gear icon) to set conditions, for example, select **Specify Date Range**, **Other Range…** to set the time period of the past 12 months.
4. Select **OK**.
5. To specify diagnosis **Type** and chronicity (where appropriate), expand the selection using the ▷ (right arrow icon) to display criterion options.
6. Choose **Type** options to define where in the chart the code is found, for example, select **Problem List** to include only patients with the diagnosis in their problem list.
7. Select **Accept**.

Note: Please refer to the related EHR Worksheet Resource for potential codes, inclusion and exclusion criteria for your consideration.

Appendix B: SlicerDicer (cont'd)

Step 3: Add Criteria with Specific Values

1. Select **Browse +** to search for and select a new criterion, for example, **Lab Components**.
2. Search for and select **LDL**.

   Note: Options are set to Any by default. Change defaults for more specific report results.
3. Select **Specific Range** to define a value, such as **> 55**.
4. Select **Advanced Options** to specify a date range of 90 days (3 months).
5. Select **Specify Date Range**, **Other Date Range**.
6. Select **OK** to save.

Step 4: Add Procedure Criteria

1. Search for and select new criteria of **Procedures**.
2. Search for and select **Percutaneous Coronary Intervention or CABG**.
3. Select **Accept**.

Step 5: Add Medication Criteria

1. Search for and select a new criterion of **Medications**.
2. Search for and select each medication to be included in the criteria.

   Note: The operand defaults to "OR" between selections. Click the OR to toggle to AND as appropriate for the criteria.
3. Group medications appropriately to fit the logic needs, allowing for items to be either included or excluded from the population; select **Advanced Options**, **Create Grouper**.
4. Select **Apply Changes**.
5. Select **Accept**.

Step 6: Confirming Logic, Saving Criteria, and Sessions

1. After criteria are added, review and adjust the logic both within and between each section.

   Note: Logic between items within a criteria section is changed by clicking the AND/OR toggle between each item. Logic between each section is set at the bottom of the criterion list. Sections are numbered. Use parentheses and operands to set logic rules.
2. From the toolbar, select **Save As** to save the session for personal future use. Select **Share** to save and share the session with other users.
3. Enter a **Name** and **Description** for the session. Select the appropriate date range options and behaviors.

Note: Please refer to the related EHR Worksheet Resource for potential codes, inclusion and exclusion criteria for your consideration.

Appendix B: SlicerDicer (cont'd)

4. Based on the Share or Save As toolbar selection, choose Share with or My Group options to complete the process.
5. Saved sessions can be accessed by selecting Load, then choosing the session.

   Note: Once a session is searched for and selected, the query automatically runs.

The processes outlined are variable and not all steps will apply to every health system. Any steps or settings that are not part of a health system's standard process should be excluded or modified accordingly. Any questions should be directed to the appropriate service provider. The practice is solely responsible for implementing, testing, monitoring, and ongoing operation of any EHR tools.

Note: Please refer to the related EHR Worksheet Resource for potential codes, inclusion and exclusion criteria for your consideration.

Appendix C: Reporting Workbench

Reporting Workbench is a reporting tool available to Epic® end users with appropriate permissions across Epic applications. With Reporting Workbench, end users can run administrator-created reports, build reports from templates, and act based on report results. Epic has a robust catalog of templates to utilize while creating a report and allowing these reports to be customized by adding specific criteria.

Creating a Report

1. In Hyperspace, navigate to **My Reports**.
2. On the **Library** tab, select the **Show templates** checkbox.
3. Search for report template **17500 - Find Patients - Generic Criteria Report Template**.
4. Select **New Report**.
5. From the **Criteria** tab, select the data qualifiers for the report.
6. Default criteria displays, for example, the **Patient Base** and **Patient Living Status**. Select the down chevron to modify a default criterion.

   Note: The criteria available on the Criteria tab vary depending on the report template being used. Select the search icon to display a list of available criteria.
7. Use the **Find Criteria** field to search for and choose a specific criterion. Select the **Search** icon without a criterion specified to view all available criteria.
8. Select **+ Add new criterion** (i.e. active medications, procedures).
9. Select the **Display** tab to review the default columns which will display in the report.
10. Search for and select additional columns to add or remove as appropriate using the arrow left and arrow right buttons.
11. Select the **Appearance** tab to define how the report is displayed and to set up conditional formatting. Make changes as appropriate.
12. To save the report, define access, and share results, navigate to the **General** tab.
13. Enter the report **Name** and **Description**. Select the **Public** or **Private** option.

    Note:

    *A. Select **Private** to enable the report to be run by only one user or a small group of specifically listed users*

    *B. Select **Public** (if security allows) to enable reports to be run by multiple users grouped by report groups, for example, such as Clinical and Patient Access*

Note: Please refer to the related EHR Worksheet Resource for potential codes, inclusion and exclusion criteria for your consideration.

Appendix C: Reporting Workbench (cont'd)

14. In the **Report Access** section, define groups or users with whom to share the report.
15. In the **Share Results** section, define groups or users with whom to share the report results.
16. Select **Save**.

The processes outlined are variable and not all steps will apply to every health system. Any steps or settings that are not part of a health system's standard process should be excluded or modified accordingly. Any questions should be directed to the appropriate service provider. The practice is solely responsible for implementing, testing, monitoring, and ongoing operation of any EHR tools.

Note: Please refer to the related EHR Worksheet Resource for potential codes, inclusion and exclusion criteria for your consideration.

Appendix D: BestPractice Advisories

Criteria Used in This Guide as an Example

Criteria were purposefully selected to include a broad scope of build steps for reference. Example criteria include one major ASCVD event plus 2 additional risk factors within specific timeframes and an LDL-C level that meet recommendations for treatment evaluation.

Major ASCVD Event: Any 1 item from one of these 4 diagnosis groups defines a Major ASCVD Event[5]

- Recent Acute Coronary Syndrome (ACS)
- History of MI
- History of Ischemic Stroke
- Symptomatic PAD

VHR ASCVD Risk Factors: an ASCVD patient who also has any 2 or more of these criteria is considered very high risk[5]

- Age ≥ 65 years
- Current Smoker
- LDL-C ≥ 100 mg/dL persistently, despite maximally tolerated statin therapy and ezetimibe
- Diabetes mellitus
- Hypertension

2022 ACC Expert Consensus Decision Pathway Recommendations: evaluate treatment to consider addition of nonstatin therapies[5]

- LDL-C ≥ 55mg/dL or LDL-C < 50% reduction
- Currently prescribed maximally-tolerated statin therapy

Build Process Steps

Step 1: Create a Rule

Step 2: Create BPA Criteria Records

Step 3: Create BPA Base Record

Step 4: Setting Restrictions, Triggers, and Actions

Step 5: Test the BPA

Note: Please refer to the related EHR Worksheet Resource for potential codes, inclusion and exclusion criteria for your consideration.

Appendix D: BestPractice Advisories (cont'd)

Step 1: Create a Rule

1. In Hyperspace, chart search for **Rule Editor**.
2. Create a new rule with a context of **Patient BPA Locator**.
3. Assign a **Name**, for example, Prolonged Statin Usage, and **ID** per the organization's naming and numbering convention.
4. Select **Accept**.
5. Search to include a **Property** for *Meds: Medications in Grouper with Lookback [73393],* and select the green **+ (plus)** sign to add a grouper to rule.
6. Set **Property details**:
   - **Medication grouper**: select an organization or Epic® grouper, for example, *ERX GENERAL JCCM STATIN MEDICATIONS [1139692]*
   - **Lookback Days**: 365
   - **Ordering Modes**: Both [0]
   - **Operator**: String Contain
7. Click **Accept**.
8. Select **Accept**.

Step 2: Create BPA Criteria Records

1. In Hyperspace, open the **BestPractice Advisory Editor**.
2. Create a BPA record for *"VHR ASCVD Criteria"* (according to the organization's naming convention).
3. Select **Record-Type** of **Criteria**.
4. In the **Add Criteria Type** window, check **Diagnoses**, then select +Add.
5. In the Criteria section, add the following criteria that defines the Major ASCVD Event **(criteria logical group 1)**.

   Diagnosis, using Diagnosis Type of **Medical History Diagnosis**.

   Create or use existing groupers which include:
   - Diagnoses codes defining Acute Coronary Syndrome (ACS)
   - Diagnoses codes History of MI
   - Diagnoses codes History of ischemic stroke
   - Diagnoses codes Symptomatic PAD

Note: Please refer to the related EHR Worksheet Resource for potential codes, inclusion and exclusion criteria for your consideration.

Appendix D: BestPractice Advisories (cont'd)

6. In the **Add Criteria Type** window **(criteria logical group 2)**, check **Lab Component**, then select **+Add**.

   Lab Component: LDL-C value > 55 mg/dL – lookback for at least 365 days

7. In the **Add Criteria Type (criteria logical group 3)**, select **Rule**, then select **+Add**.

   Rule: Search for and select the previously created rule for **Prolonged Statin Use**.

8. In the **Add Criteria Type (criteria logical group 4)** window, check **Age**, **Diagnoses**, and **Rule**, then select **+Add**.

   Age: ≥ 65

   Diagnosis, using Diagnosis Type of **Medical History Diagnosis**: (such as Diabetes, CKD, Hypertension, etc)

   Rule: An Epic®-released rule can be used to identify **Current Smoker**

9. From the top menu, select **Release**, then **Save**.

Step 3: Create BPA Base Record

1. In Hyperspace, open the **BestPractice Advisory Editor** to create the base record.
2. From the **Create** tab, enter a name; select a **Record-Type** of **Base**. Select **Accept**.
3. In the **Display** section, enter display text such as *"May be a candidate for treatment evaluation based on LDL-C trends"* and choose appropriate options:
   - Select Importance level
   - Include SmartLinks as desired
   - Display lab component results
4. On the **Linked Criteria** form, add previously built BPA criteria records in the **Linked Criteria** field and set the logic as appropriate, for example, *1 AND ([2 AND 3] AND 4).*

Step 4: Setting Restrictions, Triggers, and Actions

1. **Restrictions**: Set restrictions to control where and to whom the BPA will display, such as to providers of certain departments, and during certain activities, such as an Office Visit.
2. **Triggers**: Set trigger(s) to determine what activity causes the BPA to display, for example, performing initial criteria prescreening checks, opening a patient chart, place orders, releases signed and held order, and reporting workbench.
3. **Actions**: Add an action type of SmartSets, Order Sets and Pathways. Select an appropriate SmartSet to be presented as one of the actions to take from the displayed BPA.
4. **Acknowledge Reasons**: Set the reasons that the provider can use to close the BPA if no action is taken, for example, Not Medically Necessary.

Note: Please refer to the related EHR Worksheet Resource for potential codes, inclusion and exclusion criteria for your consideration.

Appendix D: BestPractice Advisories (cont'd)

Step 5: Testing the BPA

1. Preview and Test appropriately to ensure proper display of message and action options.
2. At the top of the form, select Release. Then select **Save**.

Note: Please refer to the related EHR Worksheet Resource for potential codes, inclusion and exclusion criteria for your consideration.

Appendix E: Health Maintenance Reminders

Build Process Topics

- Build a Registry Scoring Metrics Rule (define the Major – ASCVD Events)
- Build a Health Maintenance Rule (define the high-risk factors)
- Build the HM Topic (details, patient outreach, settings, actions)
- Build the HM Plan (topic and settings)

Note: If the health system already has a Major ASCVD Event scoring rule built, it can be used. This guide starts with copying the Epic®-released 19534 scoring rule, which includes appropriate MI and stroke ICD-10 codes. Then, adding to it:

  - ACS (using the property 'Is Diagnosis in Medical History [19114]')
  - Add PAD codes to it; for example, and use grouper EDG CONCEPT PERIPHERAL ARTERY DISEASE [100511]

This guide provides an example of one method. Health systems may prefer to use other methods to accomplish the same result.

Build a Registry Scoring Metrics Rule

Criteria Used in This Guide as an Example

Criteria were selected to include a broad scope of build steps for reference.

Example criteria include one major ASCVD event plus 2 additional risk factors within specific timeframes.

- **Major ASCVD Event:** Any 1 item from one of these 4 diagnosis groups defines a Major ASCVD Event[5]
  - Recent ACS
  - History of MI
  - History of Ischemic Stroke
  - Symptomatic PAD

VHR ASCVD Risk Factors – an ASCVD patient who also has any 2 or more of these criteria is considered very high risk.[5]

- Age ≥ 65 years
- Current Smoker
- LDL-C ≥ 100 mg/dL persistently, despite maximally tolerated statin therapy and ezetimibe
- Diabetes mellitus
- Hypertension

ACC Consensus Pathway Recommendations: evaluate treatment to consider addition of nonstatin therapies[5]

- LDL-C ≥ 55mg/dL or LDL-C < 50% reduction
- Currently prescribed maximally-tolerated statin therapy

Note: Please refer to the related EHR Worksheet Resource for potential codes, inclusion and exclusion criteria for your consideration.

Appendix E: Health Maintenance Reminders (cont'd)

Step 1: Build the ASCVD Registry Metric Rule

1. Navigate to **Rule Editor**.
2. Create a new rule with a Context of **Registry Metrics Scoring Rules [17022]**.
3. **Name** the Rule, for example, *Major ASCVD Events,* and assign ID per organization numbering convention.
4. In the **Copy From** field, search for and select an existing Scoring Rule, such as **DM Score Diagnosis Prior ASCVD Event [19534]**.
5. Select **Accept**.
6. Search to include a **Property** for *'Is Diagnosis in Medical History [19114]'* and select the green **+ (plus)** sign to add a grouper to rule.
7. Select **Property details**:
   - **Grouper ID**: select an organization or Epic® grouper, for example, *ERX CONCEPT PERIPHERAL ARTERY DISEASE [100511]*
8. Click **Accept**.
9. Search to include a second **Property** for *'Is Diagnosis in Medical History [19114]'* and select the green **+ (plus)** sign to add a grouper to rule.
10. Select **Property details**:
    - **Grouper ID**: select an organization or Epic grouper, for example, EDG ICD-10 JCCM CHEST PAIN, ANGINA, ACS
11. Click **Accept**.
12. Review the properties and confirm the logic.
13. From the bottom of the Rule Editor window, select **Accept** to complete the rule.

Step 2: Build the ASCVD Risk Factors Rule

1. From the **Rule Editor**, create a new rule with **a Context of Health Maintenance Plan Rule [8200]**.
2. Name the rule appropriately, for example, **VHR ASCVD Risk Factors**. Set ID per organization numbering convention.
3. Select **Accept**.
4. Search for and select the **Parameter**: Age ≥ 65 years [19111]. Select properties; click **Accept**.
5. Search for and select the **Parameter**: Current Smoker [82165]. Select properties; click **Accept**.

Note: Please refer to the related EHR Worksheet Resource for potential codes, inclusion and exclusion criteria for your consideration.

Appendix E: Health Maintenance Reminders (cont'd)

Step 3: Build the HM Topic

1. In Hyperspace, navigate to **HM Topic**.
2. Select the **Create** tab and enter a name for your topic, such as **VHR ASCVD Monitoring**.
3. Click **Accept**.
4. In the **Topic Details** form, **General** section, enter patient-friendly information for use in MyChart®.
5. Select a **Due Date Calculation Type**, for example, **Normal**.

   Note: This choice is not editable once the section is exited.
6. Define the **Frequency**, indicating how often the topic is due, and display timeframes pre- and post-due date.

   Note: Advanced Settings contains options based on need, such as time until completion apply, additional frequency offset in days, and alternate base date extension.
7. If Patient Outreach is part of the health system's strategy, check **Show in My Chart**.

   Note: Based on the complexity of criteria, and multiple treatment options, it may not be appropriate for a My Chart Automated outreach without prior review by a provider to ensure that the patient is a candidate.
8. From the **Topic Settings** section, define topic options, per health system protocols:
   - **Display topic macros** – allows users to select learned macros to address the HM subject that is done frequently
   - **Topic overrides** or **topic postpones** – optionally allowed
   - **Topic discontinues** – allows users to discontinue an HM topic on a patient, specifying a discontinue reason
   - **Patient-specific follow-ups** – allows the users to modify the Patient Follow-Up if other than the default follow-up is chosen, while documenting the modification reason
9. From the **Completing Actions** section, enter the satisfiers for this Plan, for example, a new medication order or lab order.
10. Select **Accept** at the bottom of the screen to complete the build.

Note: Please refer to the related EHR Worksheet Resource for potential codes, inclusion and exclusion criteria for your consideration.

Appendix E: Health Maintenance Reminders (cont'd)

Step 4: Build the HM Plan

1. Navigate to **HM Plan**.
2. From the **Create** tab, enter a name, then select **Accept**.
3. In the **Topics and Override Settings**, add the topic created above, VHR ASCVD Monitoring.
4. Under **Inclusion Criteria**, add Rule 2 created above, herein named VHR ASCVD Risk Factors.
5. Mark as **Released** and **Accept** when done.

The processes outlined are variable and not all steps will apply to every health system. Any steps or settings that are not part of a health system's standard process should be excluded or modified accordingly. Any questions should be directed to the appropriate service provider. The practice is solely responsible for implementing, testing, monitoring, and ongoing operation of any EHR tools.

Note: Please refer to the related EHR Worksheet Resource for potential codes, inclusion and exclusion criteria for your consideration.

Appendix F: Patient Follow-Ups

Healthcare providers or others in the health system may request Patient Follow-Ups to communicate with patients identified on the Patient Reports. Patient Follow-Ups are letters either sent electronically via the MyChart® patient portal or by mail to all patients who meet the potential criteria. Patient Follow-Ups can be used as the basis to proactively contact VHR ASCVD patients who have experienced an MI within the past 12 months.

Communication with patients can indicate the reason for the follow-up along with a call-to-action, such as scheduling an appointment for an evaluation. It can also include supporting educational materials such as information on ASCVD risk and available treatment options. These communications are then recorded in the patient's chart for reference.

Using a reporting template designed with appropriate communication actions, a Reporting Workbench patient can be used to identify ASCVD patients who

- Have had a myocardial infarction
- Have not had an LDL-C within the past 6 months
- Have had a recent LDL-C with a result ≥ 55 mg/dL

Note: Please refer to the related EHR Worksheet Resource for potential codes, inclusion and exclusion criteria for your consideration.

Appendix F: Patient Follow-Ups (cont.)

Step 1: Create the Letter Template

1. From **Chart Search**, select **Letter Template**.
2. From the **Create** tab, enter a Name for the letter template, such as *VHR ASCVD Patient Outreach.*
3. Allow auto-generated ID or create an ID according to health system convention.
4. Select **Accept**. Then select **Accept** again.
5. On the **General** tab, enter text content as requested for the letter, selecting SmartLinks or SmartLists for data to be auto-populated.
6. Insert **SmartLinks** appropriate fields, such as Patient Full Name (for example .name) and Date of Birth (.dob), for data to be pulled from the patient information.
7. To include a list of most recent result values for specific tests, in the letter text enter **.LASTLABX** and press **Enter**.
8. In the **Edit SmartLink Parameters** window, enter each component to be included in the letter.
9. Select **Accept**.
10. When the template is completed, navigate to the **Restrictions** tab and confirm that the **Functional Type** defaults to **MR Letter Template**.
11. To allow users access to the letter template, from the General tab, check **Released**.
12. Select **Accept**.

Step 2: Create a Patient Report Using Reporting Workbench

1. Using an appropriate Reporting Workbench template, add criteria until the report results are refined and current.
2. **Run** the report.

   Note: Reports built on a report template with the communication 'Action Pack' enabled will display the outreach communication toolbar item.
3. Select the **Communication** dropdown.
4. Select the appropriate **Communication** option:
   - **Send communication**: Sends a bulk communication to all patients in the selected results, selecting the letter template, outreach tracking, contact follow-up time, and routing details for all patients selected (MyChart® subject, phone calls, patients not contactable, etc)
   - **Generate Letters**: Sends the same letter via mail service
   - **Send Patient's Message**: Sends a generic patient message with nothing extra
5. From the **Outreach Details** tab, select the template to be used, and preview for accuracy and content.

Note: Please refer to the related EHR Worksheet Resource for potential codes, inclusion and exclusion criteria for your consideration.

Appendix F: Patient Follow-Ups (cont.)

6. In the **Outreach Tracking** section, document the outreach reason, and fill in the next contact date as appropriate.
7. From the **Routing Details** tab, fill in additional information as applicable.

The processes outlined are variable and not all steps will apply to every health system. Any steps or settings that are not part of a health system's standard process should be excluded or modified accordingly. Any questions should be directed to the appropriate service provider. The practice is solely responsible for implementing, testing, monitoring, and ongoing operation of any EHR tools.

Note: Please refer to the related EHR Worksheet Resource for potential codes, inclusion and exclusion criteria for your consideration.

Appendix G: Primary Care Provider Communications

Primary Care Provider (PCP) Communications are used to engage and advise the identified patient's Primary Care Provider. For PCPs within the health system, the message can be sent directly to the Message Center. To reach PCPs outside the health system, messages can be sent electronically as a Message or fax. Like a referral letter, these communications can be recorded in the patient chart.

Note: There are multiple ways of accomplishing provider-to-provider communications. This is one method, which assumes that the communications section has been added to the IP navigator.

Step 1: Create a Letter Template With Embedded SmartLinks

1. From **Chart Search**, select **Letter Template**.
2. From the **Create** tab, enter a Name for the letter template, such as *Notify PCP of Patient Concerns post-MI.*
3. Allow auto-generated ID or create an ID according to health system convention.
4. Select **Accept**. Then select **Accept** again.
5. On the **General** tab, enter text content as requested for the letter, selecting SmartLinks or SmartLists for data to be auto-populated.
6. Insert **SmartLinks** appropriate fields, such as Patient Full Name (for example .name) and Date of Birth (.dob), for data to be pulled from the patient information.

Step 2: Adding Lab Results to the Letter Using a SmartLink

1. To include a list of most recent result values for specific tests, in the letter text, enter **.LASTLABX** and press **Enter**.
2. In the **Edit SmartLink Parameters** window, enter each component to be included in the letter.

   Note: Component names used in this document are examples and may differ from organization component names for a lab result. Leave the Number of Results field blank to include only the most recent result.
3. Select **Accept**.
4. When the template is completed, navigate to the **Restrictions** tab and confirm that the **Functional Type** defaults to **MR Letter Template**.
5. To allow users access to the letter template, from the **General** tab, check **Released**.
6. Select **Accept**.

Step 3: Creating Rules for the Criteria and Trigger

Analysts will need to create a new rule to make both the criteria and the trigger.

1. From **Chart Search**, navigate to **Rule Editor**.
2. Create a new rule selecting **Patient** in the **Context** field; name the field and select **Accept**.

Note: Please refer to the related EHR Worksheet Resource for potential codes, inclusion and exclusion criteria for your consideration.

Appendix G: Primary Care Provider Communications (cont'd)

3. Select the following properties, using AND logic:
   A. Diagnosis Grouper Search [42135] and grouper EDG CONCEPT MYOCARDIAL INFARCTION [100047]
   B. Patient Property: ADT Is Expected to be Discharged [42125]
4. On the department profile, set the criteria that will enable automatically sending a letter to the patient's PCP:
   A. Navigate to Clin Admin, Management Options, Profile
   B. Press Home+F9, select (I)tem 47024
   C. Add a line and add the following:
      i. Enc Type: Hospital Encounter
      ii. Criteria: Enter the rule created above (Provider Communication for Discharge)
      iii. Letter: Enter the letter template created above
      iv. PCP? Yes
5. Exit the screen to save the Profile update.

The processes outlined are variable and not all steps will apply to every health system. Any steps or settings that are not part of a health system's standard process should be excluded or modified accordingly. Any questions should be directed to the appropriate service provider. The practice is solely responsible for implementing, testing, monitoring, and ongoing operation of any EHR tools.

Note: Please refer to the related EHR Worksheet Resource for potential codes, inclusion and exclusion criteria for your consideration.

References: 1. Klimchak AC, Patel MY, Iorga ŞR, et al. Lipid treatment and goal attainment characteristics among persons with atherosclerotic cardiovascular disease in the United States. *Am J Prev Card.* 2020;1:100010. **2.** Muntner P, Orroth KK, Mues KE, et al. Evaluating a simple approach to identify adults meeting the 2018 AHA/ACC cholesterol guideline definition of very high risk for atherosclerotic cardiovascular disease. *Cardiovasc Drugs Ther.* 2021;4:1-7. **3.** Grundy SM, Stone NJ, Bailey AL, et al. 2018 AHA/ACC/AACVPR/AAPA/ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA guideline on the management of blood cholesterol: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Circulation.* 2019;139:e1082-e1143. **4.** Colantonio LD, Shannon ED, Orroth KK, et al. Ischemic event rates in very-high-risk adults. *J Am Coll Cardiol.* 2019;74:2496-2507. **5.** Lloyd-Jones DM, Morris PB, Ballantyne CM, et al. 2022 ACC Expert Consensus Decision Pathway on the Role of Nonstatin Therapies for LDL-Cholesterol Lowering in the Management of Atherosclerotic Cardiovascular Disease Risk: A Report of the American College of Cardiology Solution Set Oversight Committee. *J Am Coll Cardiol.* 2022 Oct 4;80(14):1366-1418. doi: 10.1016/j.jacc.2022.07.006. **6.** Raymond C, Cho L, Rocco M, et al. New cholesterol guidelines: worth the wait? *Cleve Clin J Med.* 2014;81:11-19. **7.** Cannon CP, de Lemos JA, Rosenson RS, et al. Use of lipid-lowering therapies over 2 Years in GOULD, a registry of patients with atherosclerotic cardiovascular disease in the US. *JAMA Cardio.* 2021;6:1060-1068. **8.** Chatterjee P, Joynt KE. Do cardiology quality measures actually improve patient outcomes? *J Am Heart Assoc.* 2014;3:e000404. **9.** HEDIS 2020 Summary of Changes. https://www.ncqa.org/wp-content/uploads/2019/07/20190701_HEDIS_2020_Measures_Summary_of_Changes.pdf. Accessed September 18, 2023. **10.** CMS.CMIT Measure ID:700. https://cmit.cms.gov/cmit/#/MeasureView?variantId=5108&sectionNumber=1. Accessed September 18, 2023. **11.** Plutzky J, Benson MD, Chaney K, et al. Population health management of low-density lipoprotein cholesterol via a remote, algorithmic, navigator-executed program. *Am Heart J.* 2022;243:15-27. **12.** Roumia M, Steinhubl S. Improving cardiovascular outcomes using electronic health records. *Curr Card Rep.* 2014;16:451-456.

AMGEN®