TAKEheart Data Implementation Guide – Module 4

Preparing and Understanding Your Data to Support Systems Change

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Data Implementation Guide Purpose and Overview

Successful implementation of automatic referrals and effective care coordination depends on your ability to access and effectively use relevant data. TAKEheart's Module 4 provides an extensive overview of key data issues you will need to address to succeed in implementing automatic referral and enhancing the care coordination you provide your patients (including eligible patients that never enroll or graduate from your (or any) CR program.

This implementation guide is designed to help you to think through and execute the data activities you'll need to address to succeed. It follows foundational activities addressed in Module 1 (Understanding why AR and care coordination matter), Module 2 (Forming a team and planning to implement TAKEheart), and Module 3 (Mapping your key processes). If you've completed the activities associated with these modules, then you'll know that data is essential to the automatic referral and care coordination activities discussed in modules 5-10.

The Data Implementation Guide is divided into five roughly sequential steps your team can follow. You should skim through all the steps at the start. You may find that you're well along on some steps and haven't started others. Or you may find that some team members can focus on some steps or parts of steps while others work elsewhere. The five steps are:

1) Develop a workable approach
2) Determine what data you need and set team priorities
3) Figure out where to get the data you need
4) Evaluate data accuracy and address priority issues
5) Use your data strategically

The section below provides definitions of key terms you may be unfamiliar with that are used throughout the document. Following this definition section, we discuss each of the five steps.

Terms and Definitions

- **Measure:** quantifies the extent, quality, value, or effect of something.
- **Outcome:** reflects the impact of the actions taken, for example, the number of patients graduating from your CR program.
- **Process:** reflects the specific action(s) taken, for example, providing each referred patient a letter explaining CR and its value.
- **Patient-level data:** data related to a specific patient, for example, age, gender, race/ethnicity.
- **Aggregate data:** data related to group of objects or persons, such as a population of patients, for example, # of CR eligible patients referred in the last month.
- **Dashboard:** a graphical summary of performance on a set of priority measures that provides an overall picture of program performance.
- **Baseline:** data reflecting the "as is" state before changes are made.
- **Data quality:** refers to the appropriateness of the data to serve its intended purpose.

STEP ONE: Develop a Workable Approach

The following questions will help you create a workable plan. Use these questions to either create your plan or to evaluate and improve on an existing plan.

1) **Do you have the right people involved?**
The value of a diverse implementation team was discussed in combined Modules 1-2 training session slides and Implementation Guide. Your team should include persons that have agreed to support TAKEheart implementation in specific ways. They may or may not participate in regular team meetings. **A common error is to leave the "data people" in charge of the data task.** As you work on data-related activities you need to actively involve:
    - **People who understand what the data means, why it matters and where it comes from**. For some data tasks you will need input and advice from cardiologists, nurses and other clinicians. If you ask clinicians to join your team, most may decline because they're too busy and don't want to commit. Therefore, you should make your "asks" more modest. If you go to a cardiologist and say: we know your time is very valuable but there will be times when we really need a cardiologist to review inclusion and exclusion criteria for CR eligibility. On those occasions, would you be willing to answer a question or review a

document? If you use this type of approach, you're much more likely to gain their involvement and support.

- **People who understand where data resides in your systems and how to extract and use it**. This group certainly will include members of your IT department. But it also may involve someone from your CR program who tracks patient enrollment and attendance and knows how other process information is captured. Even if your process data eventually winds up in your EMR, you still need someone who understands how it gets in there and people that know how to access this information. While people in this group are a key part of your team, **if you make these staff solely responsible for data tasks, they will fail. They don't know enough to succeed on their own,** So, make them a key **PART** of your data team, supported by others.
- **People who need to, or who should USE the data**. This group includes care coordinators, unit managers, persons who oversee your unit at the hospital or system level, and CR staff. You'll also benefit from input from patients or possibly your hospital's patient and family advisory council. While all these people don't need to attend all your meetings, you do need to seek their input. For example, it will be important to ask them:
  - What do you really want or need to know? (early on in the process); and
  - Do the data summaries or reports you're planning meet their needs (later in the process but BEFORE you've spent a lot of time programming or producing them).

You don't need a perfect team with exactly the right people in order to get started. It's better to get the process started and then fill in gaps as quickly as you can. **If people see that your data group is really doing something tangible and already includes some people they respect, they'll be more likely to agree to participate.**

2) Do you have a clear and achievable aim?

By now your TAKEheart team should have created an aim statement. These were also discussed in combined Modules 1-2. Aim statements are designed to be ambitious, but as you think through all of the data that will need to be accessed and all the processes you'll need to redesign to get there, **the ambitiousness of the aim may immobilize your team. Don't let this happen.** To prevent this, you could revise your overall aim statement. But it may be better and easier to focus on a specific aspect of the overall aim that is:

- **Achievable in 1 month or less**
- **Something that key stakeholders care about and that will help them provide better patient care**
- **Something that is comparatively easy**

At the start of TAKEheart many teams will have no momentum, no track record of success, no experience working on a data task together, and lots of busy and skeptical people who will wait to get involved until they see that you've done something useful. **An ambitious aim defines where you want to go. Concrete and successful first steps are the best way to ultimately get there.**

3) Do you understand key processes required for success?

You and other key members of your team need a clear understanding of HOW you plan to get from where you are to where you want to go—and how soon. Your key processes should:

  - Set aside a dedicated time for appropriate members of your team to gather and review the data associated with your program. Since including all members of your team in regular meetings may be impractical, you may want to share meeting materials or highlight key issues in advance of the meeting so that everyone will be able to provide input even if they do not attend.
  - Use your overall aim statement goal and project action plan to provide you with direction and focus.
  - Review the data workflow process maps (**Module 3**) to understand how data is collected in your organization, by whom and where it is stored.
  - As you plan and evaluate your data, you will identify additional tasks you need to work on. Add these to your project action plan (**Module 2**). Remember to assign responsibility and set targets for completion.
  - Listen to your team and other key stakeholders. The team lead should try to maximize the contributions of others. If you're asking your team for input as you plan, getting their buy-in on goals and timelines, and requesting their advice when you encounter obstacles, they'll be more likely to "own" the process and commit to its success. **The job of the project lead is NOT to have all the solutions. Instead, it's to find them by working collaboratively with the team and other stakeholders.**

4) **Are you expecting setbacks and ready to respond when they happen?**
The only way to completely avoid setbacks is to not do anything. This is not an option. You may have team members leave; you may find out that some data you'd planned on isn't available; you may realize that a minor task is actually a major effort that isn't possible for your team to do yet. Don't blame yourself or your team if one (or all) of these setbacks occur. If you stay positive and frame adjustments to your plan as a sign that you're learning and making progress, your team will follow your lead. If you need to adjust your short-term plans and goals, readjust priorities based on what seems most doable, or recruit new team members, that's normal. Communicating this to your team and program leadership up-front will help set reasonable expectations and increase your ability to succeed.

STEP TWO: Determine what data you need and set team priorities.

Determining the data you will for need for any improvement project must begin with clearly stating its objectives. In the case of TAKEheart, the objectives are to: identify all patients who are eligible for CR; ensure that these patients are actually referred (via automatic referral); and maximize the number that enroll, attend, and graduate through enhanced care coordination. Focusing on these objectives can help you answer this very important question:

What data do we need?

- **Automatic referral** – implementing this requires that you know which patients are **eligible** for cardiac rehabilitation and who should make the referral.
- **Effective care coordination** requires that you can help individual patients and also deal with barriers to CR that affect patients in general. That means you need to know what factors

affect enrollment, participation and completion and can find ways to overcome barriers. So besides patient-level data about a particular patient's eligibility and referral options, you need aggregate data on referral, enrollment, participation, and completion rates for different types of patients. Simple analyses of this aggregate data should tell you whether and how sex, race/ethnicity or other factors are affecting CR referral, participation and completion.

- **Continuous improvement** requires that you design aggregate measures to assess and monitor the changes being made to the referral and care coordination systems to track your progress and identify areas where added refinements are needed.

The sections below provide the details regarding the information you need for each purpose. If you're concerned about how much data you'll need, skip to the end of this section where we discuss the value of setting priorities and strategies to avoid overwhelming your team or IT department.

Data You'll Need for Automatic Referral

To implement automatic referral, you'll need to know **which patients are eligible**, whether some of these have **reasons for exclusion**, **what referring physician or practice** you should be contacting about the referral**, where** the referral originated and its destination.

Which patients are eligible:

In general, the following patient conditions qualify for CR:

- A heart attack in the last 12 months
- Coronary artery bypass surgery
- Current stable angina
- A heart valve repair or replacement
- A coronary angioplasty or coronary stent
- A heart or heart-lung transplant
- Stable chronic heart failure

Your team can use ICD-10 diagnosis and procedure codes as well as CPT codes to identify which patients have these conditions. You should verify that this data is accessible in your EMR and that you can access it. Ultimately, you'll use this information to help program EMR specifications for the automatic referral to cardiac rehabilitation.

Condition /Procedure	ICD-10 Diagnosis codes	ICD-10 Procedure codes	CPT codes
Acute myocardial infarction	I21.0, I21.01, I21.02, I21.09, I21.1, I21.11, I21.19, I21.2, I21.21, I21.29, I21.3, I21.4, I21.9, I21.A1, I21.A9, I22.0, I22.1, I22.2, I22.8, I22.9		

Coronary artery bypass surgery (CABG)		0210X, 0211X, 0212X, 0213X	33510,33511,33512,33513,33514, 33516,33517,33518,33519, 33521,33522,33523,33530,33533, 33534,33535,33536,33572, 35600, S2205, S2206, S2207, S2208, S2209
Valve Repair/Replacement Procedures		(*Includes all codes with these as the first four identifiers*) 027F, 027G ,027H, 027J, 02CF, 02CG, 02CH, 02CJ,02NF, 02NG, 02NH, 02NJ, 02QF, 02QG, 02QH, 02QJ, 02RF, 02RG, 02RH, 02RJ, 02TH, 02VG, 02UF, 02UG, 02UH, 02UJ	33361-33417,33418-33430, 33460-33468, 33470-33478
Percutaneous transluminal coronary angioplasty (PTCA) or coronary stenting		02703ZZ, 02704ZZ, 02713ZZ, 02714ZZ, 02723ZZ, 02724ZZ, 02733ZZ, 02734ZZ, 3E07017, 3E070PZ, 3E07317, 3E073PZ, 02700ZZ, 02710ZZ, 02720ZZ, 02730ZZ, 02C00ZZ, 02C10ZZ, 02C20ZZ, 02C30ZZ,02C03ZZ, 02C04ZZ, 02C13ZZ, 02C14ZZ, 02C23ZZ, 02C24ZZ, 02C33ZZ, 02C34ZZ	92920,92921,92924, 92925, 92928,92929, 92933,92934, 92937, 92938,92941,92943, 92944, 92973, 92974
Heart or heart-lung transplant		02YA0Z0, 02YA0Z1, 02YA0Z2, 0BYM0Z0,0BYM0Z1,0BYM0Z2, 02YA0Z0, 02YA0Z1, 02YA0Z2, 02RK0JZ, 02RL0JZ, 02WA0JZ, 02WA0JZ	33945, 33927, 33928, 0051T, 0052T,0053T
Current stable angina pectoris	I20.1, I20.8, I20.9		
Stable*, chronic heart failure (LVEF ≤35% and NYHA class II to IV)	I50.22, I50.42, I50.82 * *"Stable" defined as no recent (≤6 weeks) or planned (≤6 months) major cardiovascular hospitalizations/ procedures)*		

Implantable (intracorporeal) ventricular assist device insertion		02HA0QZ	33979
Bi-ventricular pacemaker insertion		0JH609Z, 0JH639Z, 0JH809Z, 0JH839Z, 0JH607Z, 0JH637Z, 0JH807Z, 0JH837Z	33224, 33225

While virtually all hospitals use ICD-10 and CPT codes, you also need to know WHEN a diagnosis was made or a procedure was performed in order to know when a patient is eligible for CR. **Don't assume that it'll be easy to establish these dates. Sometimes this can be challenging and require extensive programming or even additional data entry.** Raising this issue early with your IT department can help you avoid surprises later on.

Which patients have contraindications:

Even if a patient is identified as eligible for CR, there may be good reasons not to refer them. For example, a patient only receiving palliative care or one with advanced dementia should probably not be referred. You'll want to compile a list of potential contraindications and discuss them with referring cardiologists to get their buy-in. **Repeatedly asking cardiologists to refer inappropriate patients to CR can produce backlash and undermine your ability to successfully implement AR**. For some contraindications, you also may need to know the relevant dates. For example, if a patient with chronic heart failure was determined to be "not stable," you need to know when that determination was made because it may no longer be applicable.

Who is the referring physician:

When physicians make referrals, you know who they are. But determining which physician SHOULD make a referral for a patient can sometimes be confusing. Is it the patient's cardiologist, their surgeon, or possibly a hospitalist who was supervising their care following an operation? It's quite possible that even the physicians involved may be unsure who should make the referral—resulting in the patient not being referred by anyone.

It's possible you've thought through this issue in your process mapping activities. If not, you may need to have a discussion with the relevant groups of physicians to clarify who should be making referrals under specific circumstances (or agreeing that it's appropriate for any of them to make the referral). If you haven't clarified how to determine who the referring physician should be (or who the referring physicians could be) then you won't be able to fully implement AR. But ultimately, you will need to identify who the referring physician is.

Where did the referral originate?

Referrals to CR arrive from many locations. TAKEheart is focused on automating referrals from the inpatient/procedural environment. To track the effectiveness of the automatic referral system you need to be able to identify the location of origin for the referral. You want to be able to distinguish referrals associated with your newly implemented automated system from those coming from other sources.

Where is the referral going?

Some organizations have a single CR program, others have several CR sites. Also, to accommodate patient needs and concerns, there are some patients who need to be referred to programs outside the organization. To close the loop on the referral, it is important to understand the destination of the referral.

Data You'll Need for Enhanced Care Coordination

Improving care coordination for individual patients requires that your staff receive patient-level data that shows which patients are eligible, whether they've been referred, and whether they've enrolled and are regularly participating in CR sessions. There's obviously some overlap with data also needed for automatic referral. But the table below captures key patient-level information your staff should be able to access about each eligible and referred patient so you can better coordinate their care. Each data type contributes to one or more activities necessary to effectively coordinate the patient's care. These include:

- Information needed to confirm eligibility and to follow up with physicians about the appropriateness of referring the patient to CR.
- Information that will help your staff develop a CR plan suitable for the patient and to anticipate and address challenges or obstacles to their successful participation.
- Information needed to reach the patient or to place them in the CR program that they may be the most successful in.
- Information about patient participation that you need for follow-up so you can reinforce success or rapidly respond to emerging participation barriers.

Patient-Specific Data Elements	Why These Data Matter
CPT codes	CPT codes are used to identify medical procedures that, in combination with other procedures or diagnoses may make a patient eligible for cardiac rehabilitation (CR). This information can be used to encourage physicians to refer eligible patients to CR.
ICD-10 diagnosis & procedure codes	ICD-10 codes are used to identify diagnoses and procedures that, separately or combined may make a patient eligible for CR. This information can be used to encourage physicians to refer eligible patients to CR.
Age	Age may be used, in combination with other demographic information, to help inform educational approaches and identify potential risk factors to CR participation.
Comorbidities or potential contraindications for CR	Staff need this information to have informed discussions with referring physicians about whether a patient should be referred or the possibility that they may not be able to continue CR even if they begin. This information will also inform CR planning and strategies for sustaining the patient's participation in CR sessions.
Address and Contact information	Contact information is necessary to facilitate enrollment and to schedule CR sessions. Address may affect which CR program a patient should be referred to or influence the strategies used to coordinate their care.
Patient Gender/Sex	Gender may be used, in combination with other patient demographic information, to help inform educational approaches and identify potential risk factors to CR participation.
Race, Ethnicity & Primary Language	Patient Race and Ethnicity may be used, in combination with other demographic information, to help inform educational approaches, highlight cultural preferences and/or differences which may present potential risk factors to CR participation.
Origin of Referral	Referrals arrive from many environments; location of origin is used to identify the origin of the referral and may be used separately or in combination with other data elements to evaluate progress with changes in referral and care coordination systems.
Insurance Carrier	Insurance carrier may be used to help identify potential risk for CR participation.
Reason for refusal	Patients sometimes refuse CR; the reasons may be used to adjust or refine care coordination efforts.
Enrollment date	Enrollment date is used to identify the date the patient schedules for their evaluation. Combined with referral and attendance information, this data also help you monitor capacity issues that may be discouraging patients from ultimately participating in CR.
Participation information	Easy access to this information is needed to follow-up on patients that are not regularly attending CR sessions and to work with them to solve logistical challenges or overcome other obstacles or objections to participation.
Referral date	Referral date is used to identify the date the patient receives the referral to CR. This date and the enrollment date are used to determine the time from referral to enrollment which is a predictor of patient participation in CR.
Reason for opt-out	The opt-out reason may be used to determine if other recruitment strategies could be used or to explore whether participation in a CR program closer to where they live or in a virtual or hybrid CR program might encourage them to participate.

When you start discussing how to obtain this information from your IT department or from staff that may be compiling it, **it's good strategy to explain why this information is needed and to keep the patients' needs front-and-center**. If you are including patients in your process mapping and on your implementation team, they can help reinforce the benefits that this information can offer to patients.

Data You'll Need for Continuous Improvement

While care coordinators and other CR program staff need the ability to access patient-specific information, continuously improving your care coordination and unit operations requires aggregated data that will enable you to obtain a big picture understanding of your success in attracting and retaining CR patients. The table below summarizes aggregated information you may want to track to support continuous improvement and program accountability.

Aggregated Information to Support Continuous Improvement	Why These Data Matter
Number of patients eligible for CR	Understanding the number of eligible patients in the population served provides a starting point for improvement.
Number and percent of eligible patients referred to CR	This information is needed to determine if AR implementation and outreach to cardiologists has increased the number of referred patients.
Demographic profile of eligible and referred patients	Knowing the percentages of patients based on medical condition, age, gender, race, location and other demographics can help identify disparities or gaps in your efforts to support all patients eligible for CR
Zip code of eligible patients for CR	Location of eligible patients helps to identify the service area and provides information about the potential need to identify other CR programs to accommodate patient convenience.
Number and percent of eligible and referred patients who participated in CR	While some patients may not choose to participate, improved care coordination and other program adjustments should increase your participation and completion rates over time.
CR referral source	Examining the source of referrals and the number of referrals from each source may be useful in identifying providers who should be targeted to increase awareness about the benefits of CR or to advocate for CR to their peers.
Number of eligible patients receiving a CR education visit	Understanding who has and who has not received an education visit prior to discharge
Number of patients regularly attending CR	Dividing the number of patients attending by the number of patients enrolled provides the attendance rate which may provide useful programmatic information about CR operations.
Number of patients who complete prescribed number of CR sessions	Dividing the number of patients who complete by the number who enroll may stimulate CR program staff to explore why only a proportion of patients complete the recommended number of sessions.

What if we can't get all this data?

The good news is: even though lots of data will ultimately be helpful, **you shouldn't try to get all of it at the start.** If you spend months or years getting data before you begin using it, you aren't going to succeed. Remember that the goal of TAKEheart is to help more eligible patients start and successfully finish CR. Even collecting and beginning to use a small subset of all the data listed above can benefit many patients. So, **don't be overwhelmed by all the data you COULD collect**. Instead, pick a smaller subset of data elements to focus on first. Consider the following priorities as you pick your initial focus:

- Can you use the subset of data to accomplish something beneficial for your patients and program in a comparatively short period of time?
- Are the data relatively easy to collect or already available?
- Is your initial focus aligned with other CR program or hospital priorities?
- What is your team most passionate about?

If your IT department has agreed to provide a programmer to build your AR system in the next three months, then focus on data necessary for this task. On the other hand, if you already have AR but physicians are "opting out" most of their patients, then some of the care coordination patient data may be a good initial focus since it may point you to patterns in which patient and physician characteristics are leading to the "opt-outs." Or if you see big gaps in participation and graduation based on gender and patient location, then data related to those issues could be your initial focus. **Trying to obtain and use some of the data described above and achieving a positive outcome is far better than trying to do too much, too fast and failing.**

One specific caution you should consider is attempting to get data from sources that aren't a part of your hospital or system and/or that use a different EMR. There may be very important reasons to get this data, but this is probably not the best place to begin. **Once you've learned how to get data from your own EMR and from other systems that your CR program uses you'll be more knowledgeable and better able to expand your efforts to get data from elsewhere.**

STEP THREE: Figure out where to get the data you need

Clarifying where the data you need is located is something you'll do at the same time you're deciding what data you need. But we've made this a separate step, because it's really important to know exactly where required data is located before you attempt to use it. Its location can affect how accurate it is, how easy it is to retrieve, and even whether you can access it at all.

We'd suggest that for each data element you plan to use, you classify it based on whether it's data from your program, hospital, or system and whether you'd need to get it from an external source (e.g., a different hospital's EMR, from an unaffiliated cardiology practice, etc.).

Data from Internal Sources

While eventually you may want to get or share data with external sources, we strongly recommend you begin with data that is under your control. Even with your own data there are multiple locations where it may be housed that you need to take into account. These include:

- **Data elements contained within your EMR**.
  All of the data required for AR needs to be contained in your EMR. CPT codes and ICD-10 diagnosis and procedure codes, patient age, date of admission and discharge are all examples that fall into this category.

- **Data elements that can be programmed into your EMR.**
  Some important information for TAKEheart may be based on elements like those noted above but require additional programming in order to use efficiently. For example, you might want to only refer patients to CR that were eligible based on criteria noted above AND were not in hospice. A programmer would need to first write the code to determine whether a person was eligible (e.g., if they have this code, or this code, or this code, etc. then they are eligible). Then they would need to write additional code to make the person ineligible if they were also in hospice. **It is a common mistake to assume that since all the information you need is in your EMR that it is easy to get this information out.** You will need to work very closely with your IT department to clarify which information already exists in the EMR in the form that you need it and what information will require programming to create. In general, **if what you need requires that the values of more than one variable are considered, then programming will probably be required**. To support this process, you may want to create a simple spreadsheet (see IT Department Worksheet) or list that provides the information identified in the bullets below. You can then review this with your IT department and answer their questions. **The clearer you are, the more productive they can be and the less frustrated everyone will be.**
  Below are general questions to consider and illustrations for a patient who had a heart attack.
    - **What variables you need:** whether the heart attack occurred in the past 12 months
    - **Why this matters:** Persons with a heart attack in the past 12 months are normally eligible for CR but we need to know who they are to approach their doctor about making a referral
    - **Where the required information is located:** for all patients treated for a heart attack in our hospital, all necessary information should be in the EMR
    - **What specific elements are needed and how should they be combined:** If the patient had any of the ICD-10 diagnosis codes for AMI on the list we provided and if those codes were for a hospital stay that began less than 12 months ago
    - **Any wrinkles that need to be discussed:** there may be issues your team needs to clarify (e.g., should it really be admitted date versus discharge date, what about long stays, what about transfers in or out, are we excluding patients discharged dead now or will we screen them out later, etc.). If you can sort these things out with your team before asking your IT department to do anything, you'll enable them to be much more productive and get the information you need much faster than you would otherwise.
- **Other internal systems.**
  Many CR programs capture additional information to support their patients that is not entered into the EMR. This frequently includes the number of referrals received in the past month, quarter, or year, whether patients were enrolled, attended an initial training, attended subsequent trainings, graduated, reasons for dropping out, information about follow-up contacts, etc. While it might be ideal to incorporate this information into the EMR eventually, we wouldn't make this a short-term priority. Instead, you should just note how much of your information is available in the EMR or from other sources. You may need help

organizing this data for use, but this probably won't be from the same person that supports your EMR. **You'll need to explain what data you have, why it is important and isn't stored in the EMR and what type of help you need**.

- **Currently uncollected.**
  As you catalog the data you need, you may realize that some information you could use isn't being consistently collected or stored. For example, you may know how many times a person attended CR sessions but not know how many times they failed to attend when scheduled. Or you may realize that you don't know the reasons patients dropped out of CR (e.g. depression, transportation, other health problems, moved away). If it's not hard to capture information that you lack, then you may want to work with your staff to begin capturing and entering this information in a consistent way. But if capturing some information will require substantial effort or the creation of new processes, you may want to make this a lower priority as you're getting started.

Data from External Sources

As we explained above, we recommend initially focusing on data you compile within your own hospital, system, and program. Getting or sharing data with other systems will take more time and work. If most of your referrals are from external sources, then this may be a higher priority for you or something you're doing already. Registries can also be a source of data for those using them. Here is a link from the Cardiac Rehabilitation Change Package for a tool created by AACVPR regarding the use of registries: Using Clinical Data Registries to Access Cardiac Rehabilitation Referral Data

Most CR programs do get at least some of their referrals from other hospitals or independent cardiology practices. If you don't already do so, you may want to set up a basic spreadsheet to capture key information on external referrals. Capturing referred patients' names, addresses, contact information, referring physician and practice, basis of eligibility, and information on whether and when each patient was contacted, agreed to enroll, or the reason they chose not to may be very useful to retain in a single location so that you can better understand your external referral sources and can include them in some measures you are monitoring (e.g. percent of referred patients that enroll, attend and complete CR).

STEP FOUR: Evaluate data accuracy and address priority issues

Why does data quality matter?

If data is collected but not used for anything, it frequently will be incomplete, missing or wrong. But if you plan to USE the data you are collecting to implement automatic referral, support care coordination and assess whether your efforts are positively impacting patients, you need to ensure it is accurate enough to support your needs.

Data is NEVER perfect, and you shouldn't insist on perfection before specific data elements are used. Instead, you should focus on whether the data is accurate enough to support your needs. To assess each data element you plan to use, you should ask four key questions:

1) **Is the data complete?**
   Ideally, you'd like to have information about every person that you are tracking. If you're considering offering virtual CR to patients far away from your program's location, then you may want to base this on the person's zip code. If a few patients don't have a zip code in your data, that's not a big issue. But if you find that half or more don't have zip codes then your data has a completeness issue that you'll need to address before you use zip code. As another example, some hospitals may list all CPT and ICD-10 codes that apply to a patient while others may only include those relevant to coding and billing. You'd want to know if your hospital was in the second group and how many patients might not have codes that could make them eligible for CR. It's probably only a small number but checking to confirm this would be important.

2) **Is the data current?**
   Some data may enter the system you are using almost instantaneously. Other information may take days, weeks, or even months to get into the system you are using. If information you plan to use to approach eligible patients while they're still in the hospital to discuss CR doesn't enter the system until after the patient has been discharged, you need to know this and develop a different process for reaching out to eligible patients. And if information that a patient has entered hospice or even died takes an extended time to be documented in the system you are accessing, you could inadvertently cause pain to the patient or their family. Therefore, for all the information you intend to use, you should ask: how long does it take for this information to become accessible to us? If there's very little time lag for most patients, then timeliness shouldn't be an issue. But if there are regular, extended delays you need to know this so you can avoid incorrectly using your data.

3) **Is the data accurate?**
   In general, **data that is already being used for important purposes is more likely to be accurate than data that does not directly affect either clinical care or billing**. Diagnosis and procedure codes directly affect what the hospital bills for the patient's care, so this information tends to be accurate. Prescribing information also tends to be quite accurate because the consequences of errors or missing entries can be disastrous. On the other hand, race and ethnicity data doesn't typically affect either billing or clinical care so it's less likely to be complete or accurate than other data fields. As another example, if your IT department creates a variable that identifies which patients are eligible for CR and you are the first (and probably only) user, then verifying the accuracy of the new variable will be extremely important. Testing these variables will be discussed more in the automatic referral training (**Module 5**).

How can you assess the quality of your data?

Data quality is always a matter of more or less. **None of your data will be perfect and you shouldn't make perfection a goal.** But you should at least have a general understanding of its quality. While there may be some specific strategies for assessing the quality of particular data elements, general strategies you can employ for much of your data include:

1) **Understand how it's currently used.**
   As noted above, data that already is being extensively used for other mission-critical purposes is probably high quality; data that's new or that's being used by you but not by many others in your organization should be scrutinized more closely.
2) **Understand where it came from.**
   Data that originates from entry into a system with error checks built in and flows directly from there into your EMR doesn't have as many potential sources of error as data that's captured by a care coordinator over the phone and then manually transcribed and manually entered into a tracking spreadsheet that CR program staff use. In general, data that is captured or transferred manually into systems that do not include any types of error checks or quality assurance processes is more likely to have quality issues.
3) **Ask people who currently collect or use it.** If you make it clear that no one will be blamed and that you just want to understand and then ask staff that collect or use data elements how accurate they think it is, you can learn a great deal. Make sure you ask about whether the data is ever (or often) missing, how long it normally takes to be entered, and whether it's accurate once it is entered. Or you could just ask in a staff meeting: "How much time have you had to spend in the last month fixing mistakes in information we have about patients. What did you have to fix and why?" If you make it clear that the goal is better patient care and continuous improvement versus blaming someone you can learn much about data quality and how it can be gradually improved.
4) **Keep track of quality issues you become aware of.**
   If you learn from staff or other stakeholders that data isn't complete, accurate, or up to date you may want to just compile a list of the data issues you become aware of. You can share this list with stakeholders to elicit feedback on other data issues they are aware of. You can also discuss the list with your team and IT Department to prioritize which data quality issues should be addressed first.

5) **Check for consistency and logical plausibility.** Getting into the habit of looking for consistency and logical plausibility is key to ensuring the quality of your data. If a measure you track regularly changes dramatically from one month to the next, you should probably confirm that the change is real or determine if one of the reports was inaccurate and why. If a report shows a patient averaged attending more than 3 CR sessions weekly for the past 12 months, that should be explored to see if a quality issue has occurred. If you're not comfortable doing looking for issues like these, one or more of your team members or staff

members from your program may be good at it. If so, they should be empowered to look for data issues and call significant issues to the attention of the team or group.

What to do if you find data quality issues?

As you begin to use data to support AR, enhance care coordination, and drive continuous improvement, you will encounter quality issues with some of the data you were planning to use. How you should respond to these issues depends on several key factors:

1) **How many patients it affects.**
If one in a hundred of your patients has inaccurate contact information, you're probably doing very well. On the other hand, if you have no available contact information for a majority of your patients then you need to fix this problem in order to effectively coordinate all your patients' care.
2) **How badly it could affect any one patient or your program.**
If you find inaccurate data that could directly harm a patient, then you and your staff should follow established procedures for reporting and fixing the problem. If you realize that data quality issues are harming relationships with cardiologists or practices that refer patients to you (e.g., failing to note contraindications, asking for referrals for patients that don't meet eligibility criteria, etc.), then that's a significant issue you need to address. Or if your patient satisfaction scores are low because patients frequently need to correct data that's in their charts, that is a quality issue you should address. On the other hand, if the quality issue doesn't cause anyone any serious harm, then addressing it is a lower priority.
3) **How easy it is to fix.**
In some cases, a quality problem can be easily fixed. If so, you should do it. You may not be the best person to know how easy or difficult a fix may be so we'd recommend discussing the issue with staff to see if there's an easy solution (or to see if your solution creates other problems you hadn't thought of).

If you identify one or more pieces of data you'd planned to use, but you realize they have quality issues, you'll have to decide what to do. There are at least four commonly used options:

1) **Don't use it.**
If a data element is frequently missing or inaccurate and using it won't help achieve your aims (or will create confusion or frustration) then it may be best to focus on other issues that you do have quality data about.
2) **Acknowledge it.**
If you're including data in a report or tracking document and you know it has some quality issues, it's appropriate to acknowledge them. (e.g., we don't have race and ethnicity data for all our patients, but based on what we do have, there's a gap in graduation rates). This

approach will allow you to share the information you do have while ensuring that others are aware of the same quality issues you know about.

3) **Double check it.**
In some cases, it may be easy to ask a patient or other staff member to confirm whether information is correct. Adding a double check won't eliminate the underlying reasons why the information wasn't originally accurate, but it can help to fix issues before the data is used for other purposes.
4) **Fix underlying causes.**
If information is really important and it has significant quality issues, then you will probably need to address them. We wouldn't recommend doing this at the start of TAKEheart unless you already have to. But frequently bad data stems from bad processes. Therefore, if you can improve a process and address a data quality issue at the same time, that's a win-win.

STEP FIVE: Use your data strategically

If you don't use or plan to use some of the data you currently collect then you can either ignore them or possibly stop collecting them. **The only data that matters are data that you USE.** In this section we'll help you link your data to the three main activities in TAKEheart: implementing automatic referral, enhancing care coordination, and supporting continuous improvement.

Supporting Automatic Referral

Data needed to determine eligibility for CR and referring physician is essential to implement AR. More details on this process will be discussed in modules five and seven. Because AR may take months to fully implement, you may want to set interim data goals that will allow you to measure progress. These could include:

1) Generating a list of all patients in your EMR that are eligible for CR
2) Generating a list of all patients in your EMR that are eligible for CR but should not be referred due to contraindications that your cardiologists have agreed on (e.g., in hospice, experienced advanced, severe dementia, etc.)
3) Determining whether each eligible patient in your EMR can be linked to one or more physicians that could make a CR referral for them
4) Describing in a defined period of time (e.g., the last quarter or six months) how many patients eligible for CR fit into each of the seven eligibility categories noted above in step two
5) Categorizing eligible CR patients based on sex, age, race and ethnicity

Many TAKEheart participants may be unable to do any of these things when they begin. Setting goals for achieving these or other data milestones can help you see whether you are making tangible progress towards AR implementation.

Enhancing Care Coordination

Most CR programs in TAKEheart report already being able to retrieve information about patients needed to coordinate their care. Central to this is the ability to either generate patient-level reports or to query their systems in to obtain information to support the care coordination of individual patients. Because many programs have experienced staffing changes over the past year, it is essential that all new staff receive the training and support they need to access reports or make patient queries. **If staff don't know how to access data in your system, then they can't give patients all the help they need.** Relevant data that all staff should be able to access include:

- The list of all patients identified as eligible for CR and whether they have been referred
- Information on whether each of these patients has been contacted about CR and the outcome of those conversations
- A waiting list of all patients that have enrolled (or stated they wish to begin) CR but haven't yet started due to capacity limits.
- Whether each patient has completed the enrollment process and attended an initial session
- Attendance information for each patient, as well as notes related to conversations about missed sessions
- Clinical data recording key metrics to inform rehab assignments and track progress over time
- Patient notes documenting any issues encountered during rehab and program staff's efforts to assist them
- Records of follow-up with the referring cardiologist informing them of patient enrollment and progress
- Reason patient may have dropped out of CR before program completion
- Contact information to follow up with each patient by phone, email and mail (or notes that the patient can't be contacted by some of these modalities)
- Patient demographic information including age, sex/gender, race/ethnicity, marital status, etc.
- Information about patient insurance, transportation, and other factors that may impact ability to participate

You may want to review this list with others in your program. There may be items that you don't use and decide to drop. There may be other items that you want to add. For each item on your final list, you should see if:

- All staff can easily locate or generate the information;
- Some staff don't know how to find information that others can find; or
- Most staff can't easily locate that type of information.

This is a particularly valuable activity if you have new or temporary staff. **Ensuring that everyone can access the data they need to coordinate patient care will benefit both your patients and your program.**

Supporting Continuous Improvement

The third general use of TAKEheart data in your CR program is to support continuous improvement. Data can be a powerful tool to support your patients and TAKEheart (and all serious improvement efforts) need to be guided by it. We don't think it's a coincidence that two of the biggest weaknesses in CR nationally are in two areas where most programs lack data:

- The percent of eligible CR patients that are ever referred to CR is alarmingly low. If your program is like most others, you don't know how many patients you have that are eligible for CR so you don't know what percent of them are referred.
- There are major gaps between women and men and between white persons and persons of color in how frequently they are referred to, enroll in, or successfully complete CR. But because data on race and ethnicity is often incomplete or inaccurate and because few CR programs consistently look at the data that is available, few programs know how well they are doing supporting underrepresented groups.

TAKEheart endorses the concept that "**you cannot improve what you cannot measure.**" We'd also say that "**you will not improve what you do not measure and carefully monitor**." To help you do this, start by reviewing what we mean by measures and a few common measurement errors you should avoid. We'll then talk about how to incorporate your measures into reports, a TAKEheart dashboard, and finish with some tips for using these resources to help support continuous improvement.

Calculating and Using Key Measures:

In very basic terms, measures describe an object or outcome or process on a given dimension. Measures may describe a single thing (e.g., the weight of a particular person) or a group of things (e.g., the average time between enrolling and starting CR). When you create measures it's very important to be clear about exactly what is included in the group that's being measured. Two common ambiguities can create problems. One is the period of time that the measure encompasses (e.g., number of referrals in the past month or quarter). The other potential ambiguity involves which things are included in a group (e.g., number of eligible patients in our EMR (but not patients missing from our EMR), or percent of eligible patients without a contraindication that were referred.

Measures can describe things using many metrics. Sometimes it's just a number (how many patients enrolled in CR in the past 12 months). Sometimes it's an average (average number of sessions attended by patients starting CR in the past quarter. A third common metric is a rate or percent. Rates or percents are calculated based on the number of patients (or CR sessions, or staff, or whatever the measure is focused on) that are included in both the numerator and denominator for the rate.

The table below describes the role of the numerator and denominator in a rate more clearly.

Measure Component	Definition	Notes
Numerator	What must happen to get credit for the measure	- Applies only to patients in the final denominator. - May have multiple variables, e.g., what, when - All variables must be met to receive credit
Denominator	Patients included in the measure	- Defines the patient group or subgroup that should be receiving certain care processes or achieving certain outcomes.
Exclusions	Patients excluded from **BOTH** the denominator and the numerator for the measure	- May be thought of as "exceptions to the rule. - Might be multiple exclusions. - If patients meet the denominator criteria and the exclusion criteria, they are removed. - Examples: dementia, advanced cancer

For example, if your measure was the percentage of patients graduating annually from your CR program and you'd had 100 patients start the program in the past year and 45 graduate, then your rate would be 45/**100** = 45%. However, if your measure was the percent of patients that did not die or move away before they could graduate and 10 patients were excluded for one of these reasons, then your rate would be 45/**90** = 50%. Either measure is perfectly appropriate to use—as long as you're clear and consistent so people understand what it means each time they see it. While rates are frequently used and extremely helpful, there are several common challenges that you need to steer clear of. To illustrate one common challenges, we'll use a standard measure: the percent of referred patients that enrolled in CR in the past month.

- **Timeframe.**
  If you start with the number of patients that were referred in the past month, it may be too soon to know how many of these have enrolled. You may not have even spoken to people that were just referred at the end of the month. On the other hand, if you start with the number of people that were enrolled in the past month, that could include referrals that were made several months earlier. To avoid the confusion this can create, you'll need to clarify your measure a bit more. If you make your measure: patients that enrolled in CR within 60 days of their referral, then you'll have a clearer measure and one that will be easier to interpret and trend over time.
- **Muddled numerators and denominators.**
  To calculate a rate or percent you need to know how many cases are in the denominator of the rate. You may be tracking the percent of eligible patients that were referred to CR. For this measure, your denominator might be all patients in your system's EMR that were determined to be eligible for CR and did not have a contraindication. The numerator for your rate OUGHT to be the number of these patients that were actually referred for CR. However, instead of extracting this information from your EMR, you look at your CR program's log of all referred patients in the past month and use that total to calculate your rate. But there are two problems. First, your program could have received external referrals of patients that weren't in your system's EMR. All these patients were included in the numerator of your rate

but not the denominator. In an extreme case, this could result in a referral rate of more than 100%, which obviously doesn't make sense. The second possible problem is that your AR system might be set up to also make referrals to other CR programs closer to where the patient lives. If this happens, your numerator may leave out patients that actually were referred. To avoid this confusion, you need to make sure that **the only people counted in the numerator were also included in the denominator**.

- **Small denominators**:
  When your rate is based on a small denominator, small changes in whatever you are measuring can dramatically change the rate. Therefore, if you have 8 openings in a training session and two people that normally attend get sick, your rate will plummet from 100% to 75%. If your program is small, many rates you might be interested in tracking may change substantially from month to month as they are based on a small denominator. There are two strategies you can use to address this challenge:

    - Use numbers rather than rates. If your program is small, you probably will know each patient that was supposed to attend a CR session, who was absent, and why. If that's the case, then it may be easier and less confusing to use number of attendees rather than an attendance rate.
    - Use a longer time period. If your volume is low, then including a longer measurement period will give you more stable rates for your measures. Weekly or monthly rates may be very useful for large programs, but quarterly or semi-annual rates may be more interpretable for smaller programs. You won't be able to see as rapidly whether improvements you're making are having an impact. But you'll also avoid drawing wrong conclusions from a very small number of observations.

Hospitals track hundreds of measures of quality, patient experience, volume and financial health. Some large CR programs also have very large sets of measures that they track. If you don't do much with your data yet, then it's probably best to start with a small set of measures that track the data you decided was a priority to collect. **A handful of measures that are accurate, regularly updated, and aligned with your program's priorities are a better place to start than a large set of measures that aren't understood or used to make your program better.**

When possible, we'd also encourage you to align your measures with measures being used by respected national groups (e.g., measures in the AACVPR or ACC registries). And if you are part of a care system, it's better to have one set of measures related to CR automatic referral and care coordination than to have multiple hospitals develop their own. We know that building consensus for measures across a system can take years. Therefore, you shouldn't keep that from moving ahead. But you should at least check to see if other places in your system have measures already in place that you can use before developing your own. We also recommend the following resource from Million Hearts: Cardiac Rehab Use Surveillance Guidance.

Creating Reports from Aggregated Data

The purpose of developing and updating measures is to continuously improve the quality and efficiency of care you provide to your patients (including people eligible for CR that aren't enrolling in a CR program). But for your measures to have value, people need to see them, understand them, and talk about them. A monthly or quarterly report that consolidates measures you are tracking into a single, short document or set of slides is more likely to be used than a bunch of stand-alone emails, each reporting different measures or a lengthy report with dozens and dozens of measures.

Done well, visually depicting data makes it easier for people to understand. But this does not mean that your data visualization needs to be elaborate. Someone with a modest level of proficiency in Excel should be able to create data visualizations that can help CR staff and hospital leaders understand key patterns and trends.

While graphics can help make data easier to understand, most viewers also will want some comparison point to help put your measure results into perspective. **"Compared to what?" is a normal reaction when attempting to interpret data results.** While there are many potential comparison points you can use, four are used quite frequently. Using a mix of these comparison points may enhance the value of the measures you compile:

1) An absolute zero or 100% level. These are most appropriate when you expect an activity to either never occur (e.g., prescribing or other patient safety errors) or to always occur (e.g., attempting to contact each person that has been referred to your CR program).
2) Improvement over a defined baseline level. When possible, it is good to know your level of performance before you implement activities designed to improve it. Many TAKEheart aim statements state that they want to achieve an X% improvement within 12 or 18 months. These improvement goals presume that you know your current level of performance. While determining baseline performance levels is a good strategy, it's important to understand that sometimes improvements you make will affect how you are measuring things. For example, if you realize that you've been including external referrals in what was supposed to be your internal referral rate and correct this mistake, your referral rate will go down. This risk isn't a reason to avoid collecting baseline data; you'll just need to be sure that you account for any measurement changes that could make comparisons with baseline data confusing.
3) Comparison to an internal or system goal or standard. Sometimes CR programs, hospitals or systems set goals that your program is expected to meet. Done well, setting these goals will incorporate input from staff about what results can be achieved and how to achieve them. If you work with your staff to set key goals, they'll be more bought-in to those goals and work harder to achieve them.
4) Comparison to an external standard. There are many sources of benchmarking data. Registries including those from AACVPR and ACC allow you to benchmark your performance on key metrics against those of comparable CR programs. Making those benchmarks (e.g., being in the top X% of comparable CR programs) comparison points for some of your measures will give them credibility and prevent you from setting unachievable goals.

Once you have measure results and have decided on what kind of comparison points you want to use for each measure, producing a short report that displays the results should be very manageable. You may get someone from your IT department to help produce the graphical displays of your data. Producing a report shouldn't be a time-consuming task for someone that understands the measures and has modest experience working with excel (or who can recruit someone with that skill).

To help you produce basic reports (and keep you from overproducing them), the spreadsheet that accompanies this implementation guide includes two example reports. One (AR measure report) summarizes progress metrics associated with implementing automatic referral, while the other (CC measure report) summarizes progress metrics associated with care coordination. There's a separate worksheet for each report where data is entered to create the graphics in the report (the AR and CC data worksheets). We really want to emphasize:

- It's not hard to create basic graphical data displays. While your IT department may be able to do this for you, it may be better for you to do it. It may be best to work with someone in your CR program, that uses excel, to help you create a graphical data display that will let you make adjustments when you need to (which will be often as you're getting started). **If you do get IT involved, you can use these reports to show them roughly what you want.** We suspect that this will work better than attempting to explain what you want orally or in writing.
- We don't recommend that you use these exact report templates. The time periods and measures that are highest priority are going to be different everywhere so your reports should be different too. But we do think the reports (and the data worksheets that produce the graphics for them) should let you see that you don't need to do lots of writing. Your goal should be to explain why you're tracking a measure and call attention to any results that are really good, really troubling, or that are leading you to make changes. Once the initial shell is created, updating it should take under an hour.

Creating a TAKEheart Dashboard

Some organizations use dashboards to keep leadership and staff focused on the metrics that are linked to the top priorities. Typically, the dashboard is at a high level, is only a page or two in length, and consists of a small number of measures that are drawn from the larger number of measures the organization is tracking.

Dashboards are an effective strategy to convey your progress to senior leaders that oversee your program. If your organization already uses dashboards, try to make your TAKEheart dashboard similar in length and general format. Unless creating a dashboard is an organizational expectation, we'd suggest that you initially focus on implementing core AR and care coordination activities as well as measures of progress. A sample dashboard is provided below. It is based on the priority goals of the example CR unit. Your dashboard should reflect measures directly related to your program's top priorities.

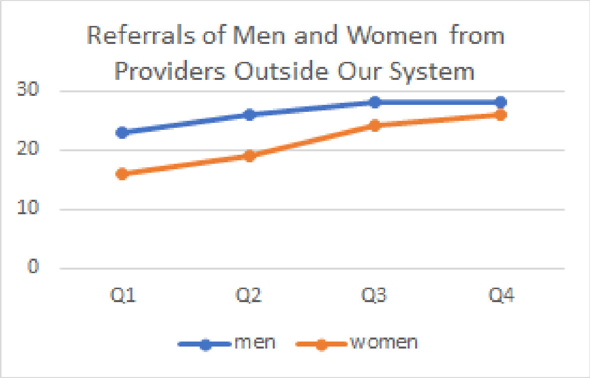
Maximizing the Value of Your Measures and Reports

Like data, reports only have value if they are used. And while circulating reports by email is a good thing to do, there are other methods you can use to maximize their impact. These include:

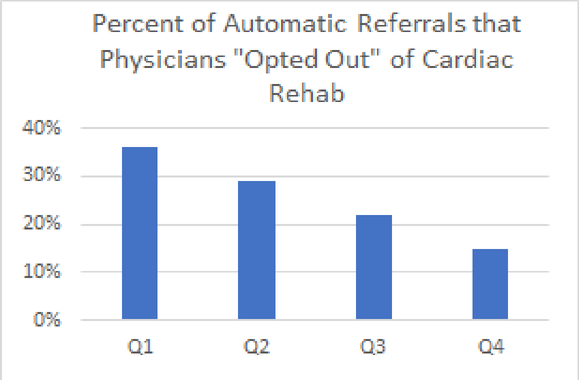
1) Discuss them with your TAKEheart team. They can help identify errors that should be fixed before others see them. They can also help to interpret the results you're seeing. And most importantly, they can use the reports to help set or adjust priorities based on areas that are struggling.
2) Reference the reports in staff meetings. In under 5 minutes you should be able to pick out 2-3 findings from the report to highlight to staff. Over time, make sure to highlight some things that are going well and should be celebrated, some things that are going poorly and need attention, and some things that you don't understand or know how to explain. If you give staff the opportunity to ask questions or to propose solutions to problems or explanations for things you don't understand, you'll help reinforce the importance of TAKEheart and the need for everyone to make it successful.
3) Share the reports with senior leadership. This could be in an email or in periodic meetings that you have with them. You need their support for TAKEheart to succeed so it's strategic to help them see the progress you're making and challenges you're working through.

Sample Dashboard

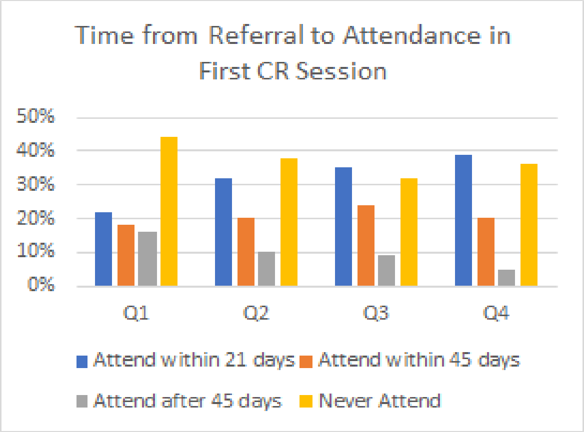
Example Dashboard



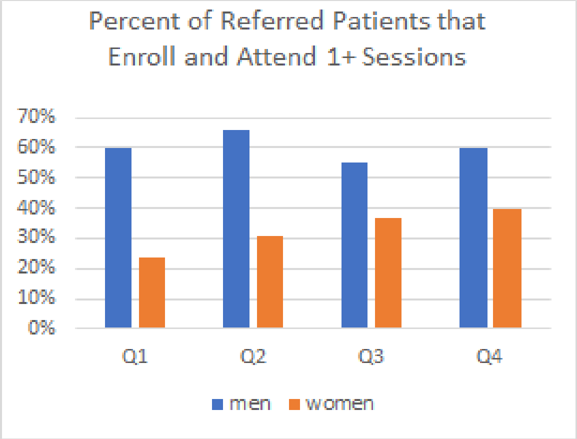
Met goal of 50 external referrals and reduced gap between men and women referred to our program.



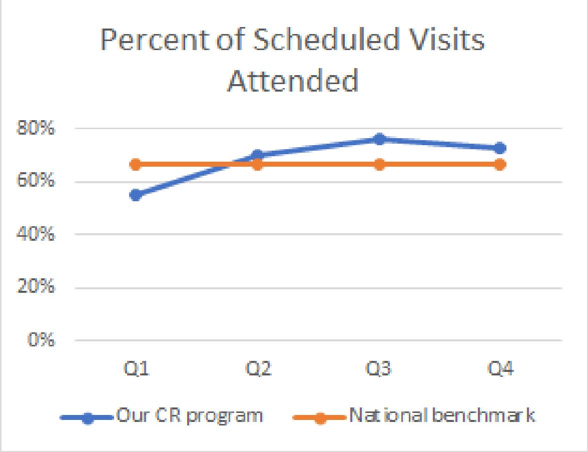
Reduced percent of opt-outs from 36% to 15% through improvements to AR system and better communication with cardiologists.



Increased percent of patients attending first CR session in 21 days and decreased percent never attending



Decreased gap in CR participation between men and women from 36% to 24% but further reductions are still needed.



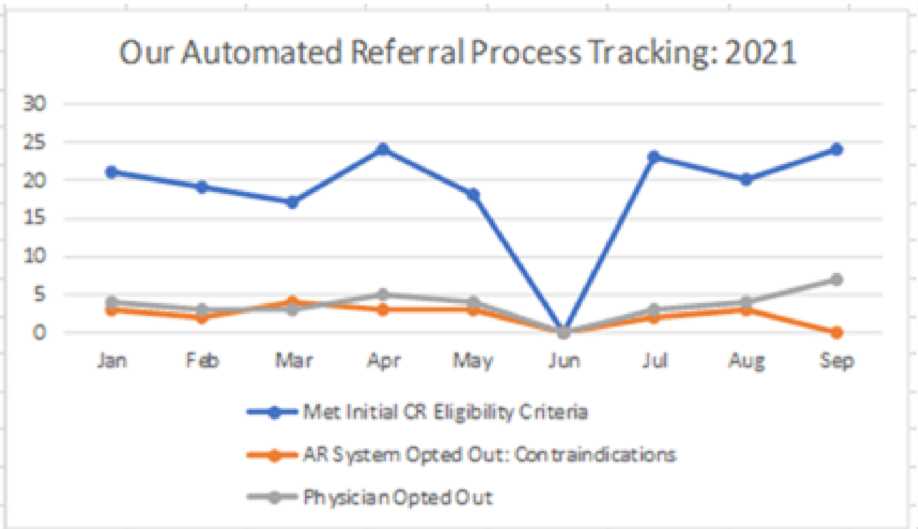
Efforts to improve CR patient attendance have raised the level and increased it above the national benchmark level.

Sample Reports

TAKEheart Automatic Referral Report: October, 2021

This sample report tracks five key measures selected by CR program leadership in consultation with hospital leadership supporting the TAKEheart initiative. Automatic Referral with the option for physicians to opt-out patients was implemented in Fall, 2020. Data tracking began in Jan. 2021 and goes through Sep. 2021.

Each table is followed by an explanation of why we are tracking this and comments on results so far.

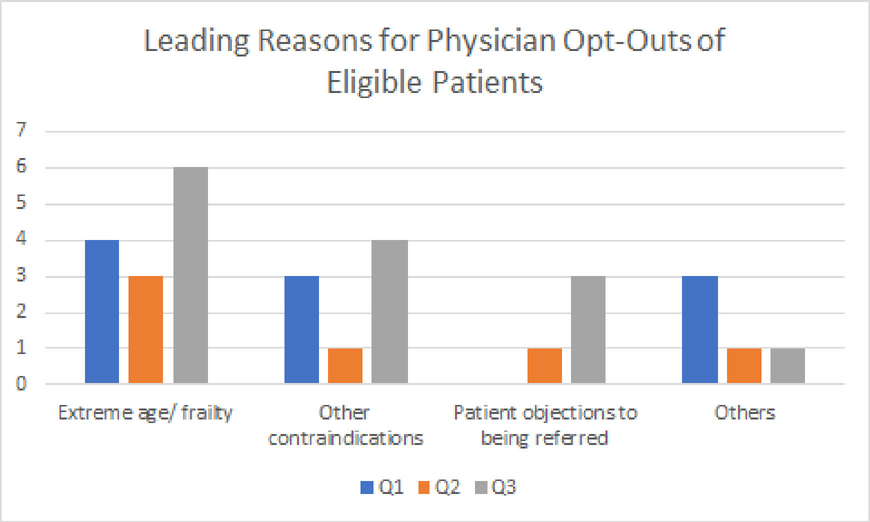


Why We Are Tracking This:

We are tracking the number of automated referrals the system is making each month as well as how many eligible patients are being opted-out by either checks built into the system or by physicians. Monitoring this is helping us refine the system and ensure we are gaining physician buy-in.

What We Are Learning:

In late May the AR system was inadvertently turned off. The data review alerted us to the problem and it was fixed in late June. We do not understand why the system failed to exclude persons with agreed-on contraindications in Sept. We are working with IT to resolve this issue and have explained the glitch to physicians who were affected by it.

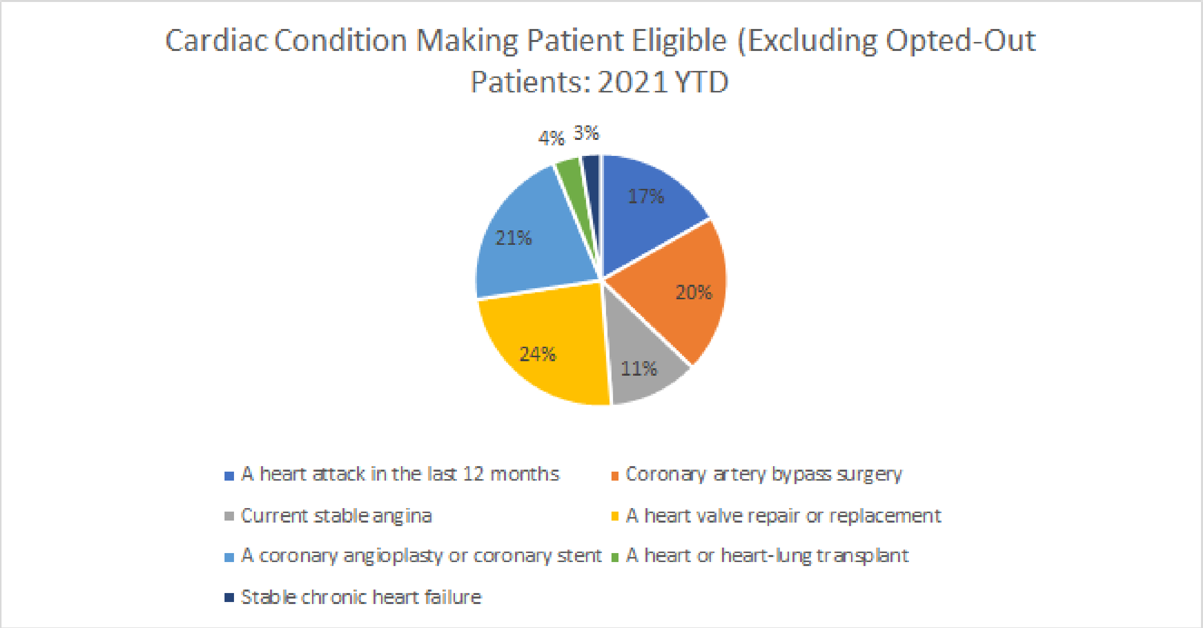


Why We Are Tracking This:

whether system opt-outs are defined correctly and whether standards for physician opt-outs might be developed.

What We Are Learning:

Reasons for Opt-Outs are consistent with what we have been told to expect by physicians in our system and elsewhere.

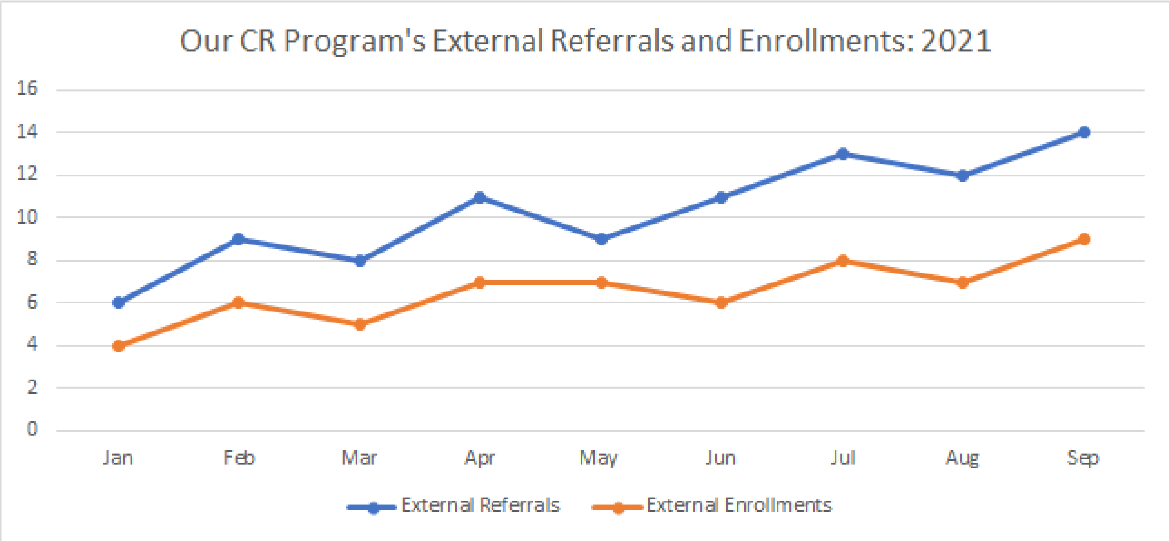


Why We Are Tracking This:

We are tracking the cardiac conditions identified by the AR system to see whether results are consistent with other information about cardiac care provided in our system.

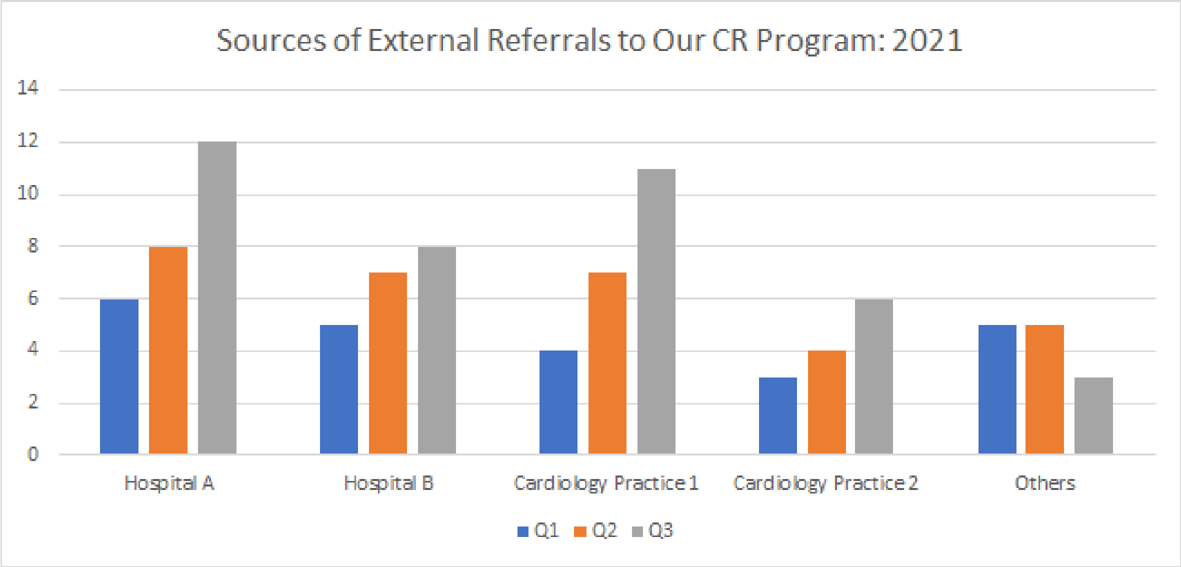
What We Are Learning:

So far, the conditions for persons determined by the AR system to be eligible for CR are what we were expecting based on our known volume of types of cardiac patients we serve.


Our CR Program's External Referrals and Enrollments: 2021

Why We Are Tracking This:
While most CR referrals come from within our system, we do not want to neglect the external hospitals and practices that also refer patients to us.

What We Are Learning:
Our outreach to these practices has led to a gradual increase in referrals that we continue to work to increase.


Sources of External Referrals to Our CR Program: 2021

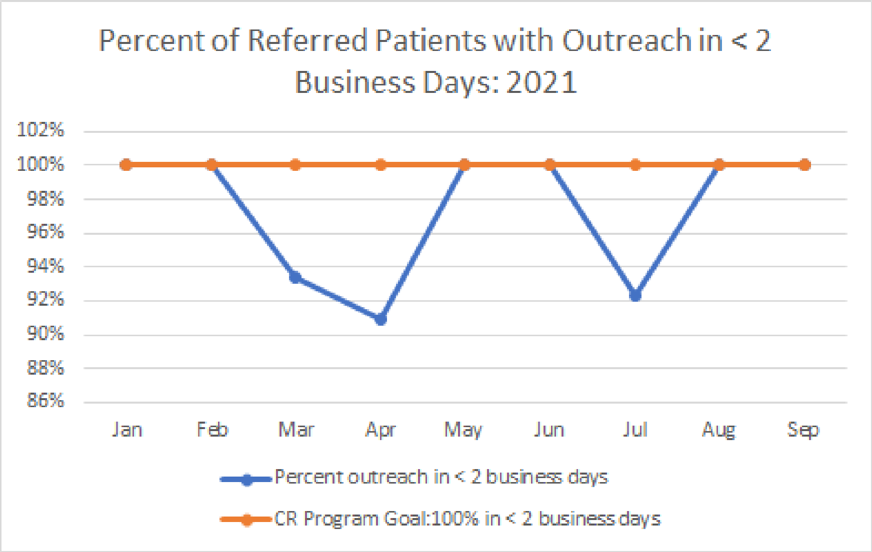
Why We Are Tracking This:
We want to maintain strong relationships with our leading referral sources so tracking the referrals from top sources is important.

What We Are Learning:
Our top four external referral sources have all increased number of referrals. We are expanding our outreach to smaller sources of referrals to see if their referrals to us can increase.

TAKEheart Care Coordination Report: October, 2021

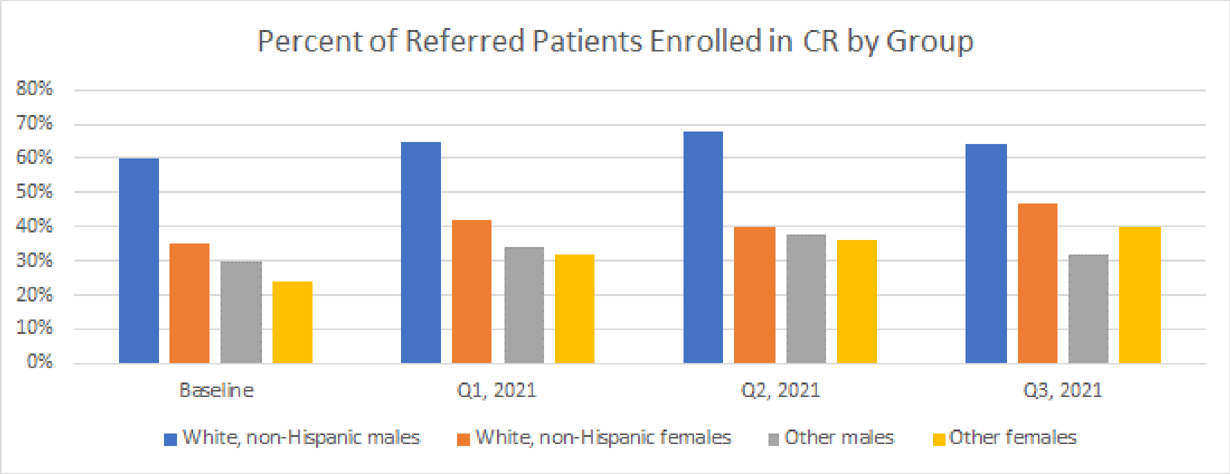
This sample report tracks four key measures selected by CR program leadership in consultation with hospital leadership supporting the TAKEheart initiative. Efforts to improve care coordination and reduce disparities in participation and success were begun in Fall, 2020. Benchmark data was collected in the last three months of 2020 and data collection has continued through Sep. 2021.

Each table is followed by an explanation of why we are tracking this and comments on results so far.



Why We Are Tracking This:
Feedback from program staff and cardiologists indicated that we were not always attempting to contact patients immediately after they were referred. Staff set an ambitious goal of attempting to contact every referred patient in less than two business days

What We Are Learning:
In the nine months since this 100% goal was set, it has been met six times. In the three months we did not meet this goal, we failed to outreach to one patient in under 2 business days. In each case, staff discussed the reason for this and have adjusted processes to prevent the underlying process failure from occurring again. Cardiologists have reported satisfaction with our improved outreach.

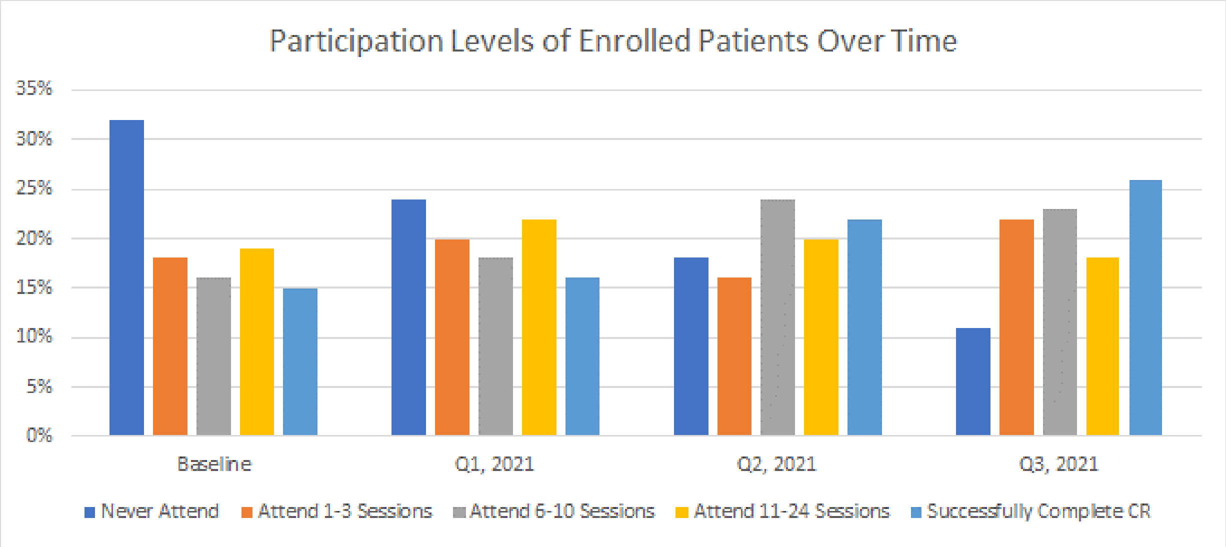


Why We Are Tracking This:

Although women and persons of color are less likely to enroll in or complete CR, we believed we could reduce the CR enrollment gaps between white, non-Hispanic males and other groups.

What We Are Learning:

Since we made process and outreach changes to increase CR enrollment among eligible patients we have seen an overall improvement. While we are increasing the percent of white women and women of color that enroll in CR, we have not raised the enrollment rates of males of color. We are continuing to explore methods that will improve how well we are supporting this group.

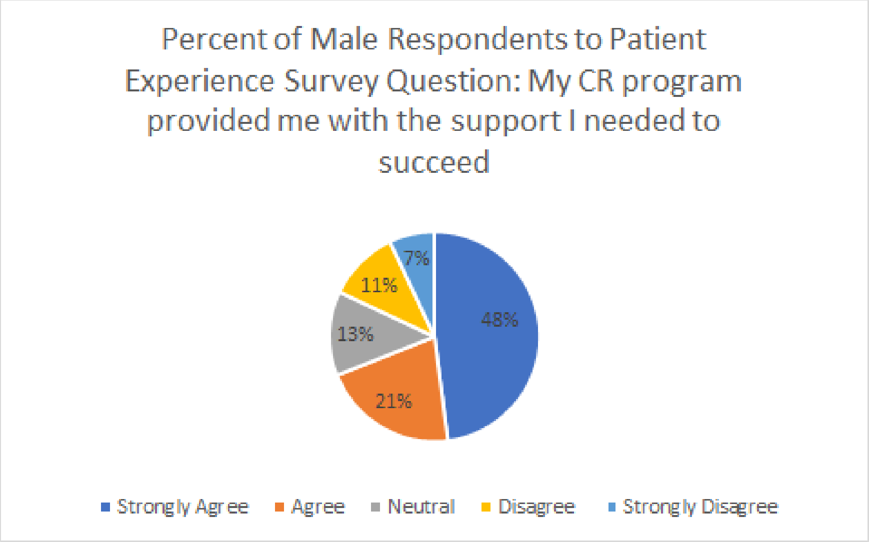


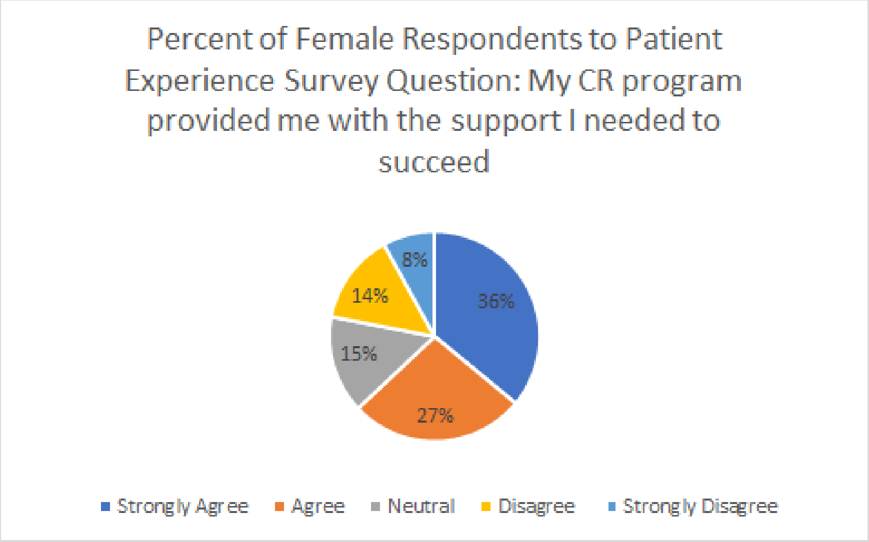
Why We Are Tracking This:

When we compared our program's completion rates to national benchmarks for comparable programs we realized we were below national averages. CR leadership and staff felt that we need to focus our efforts on improving program completion rates.

What We Are Learning:

Since we started to focus on this challenge we have substantially reduced the percent of patients that enroll but never attend and increased the percent of patients that graduate from our program. We are now slightly above the national benchmark but are continuing to work to improve graduation rates even more.


Percent of Male Respondents to Patient Experience Survey Question: My CR program provided me with the support I needed to succeed


Percent of Female Respondents to Patient Experience Survey Question: My CR program provided me with the support I needed to succeed

Why We Are Tracking This:
Social support and encouragement are important factors that help CR patients graduate and continue to maintain healthy lifestyles following graduation. Because improving the patient experience is a system-wide goal, we are tracking and working to improve how supported men and women CR patients feel in our program.

What We Are Learning:
While a majority of both men and women CR patient survey respondents agreed that the CR program supported them, more men strongly agreed with this than women. We are working to understand the reasons for this and to see how we can support women as well as we support men.

Key Resources

1. Information on AACVPR Data Registry. 2021. Available at https://www.aacvpr.org/Portals/0/CR-Registry_FAQs.pdf

   AACVPR presents common guidance on why it is beneficial to participate in the AACVPR Outpatient Cardiac Rehabilitation Registry, including how to subscribe to the program, the cost of participating in the Registry, how data is accurate and secure, and what reports will be available.

2. Centers for Disease Control and Prevention. Million Hearts: How to Use the Cardiac Rehabilitation Change Package. 2021. Available at: https://millionhearts.hhs.gov/tools-protocols/action-guides/cardiac-change-package/how-to-use.html

   The Million Hearts team at the Centers for Disease Control and Prevention presents guidance on how to utilize the change package to prioritize change and measure quality improvements efforts.

3. R J. Thomas, G Balady, G Banka, et al. *2018 ACC/AHA Clinical Performance and Quality Measures for Cardiac Rehabilitation.* J Am Coll Cardiol. 2018 Apr, 71 (16) 1814-1837. Available at: http://www.onlinejacc.org/content/71/16/1814#targetText=The%20American%20College%20of%20Cardiology%20(ACC)%2FAmerican%20Heart%20Association,scientific%20evidence%20into%20clinical%20practice.&targetText=The%20ACC%2FAHA%20Task%20Force,quality%20measures%20from%20performance%20measures

   This report by the American College of Cardiology summarizes performance and quality measures for cardiac rehabilitation. Its goal is to provide practitioners and institutions with tools to measure quality of care and identify opportunities for improvement.

4. Aragam KG, Dai D, Neely ML, Bhatt DL, Roe MT, Rumsfeld JS, Gurm HS*. Gaps in referral to cardiac rehabilitation of patients undergoing percutaneous coronary intervention in the United States.* J Am Coll Cardiol. 2015 May 19;65(19):2079-88. doi: 10.1016/j.jacc.2015.02.063. PMID: 25975470. Available at:

   https://pubmed.ncbi.nlm.nih.gov/25975470/

   This report by the American College of Cardiology summarizes gaps in referral to cardiac rehabilitation for patients undergoing percutaneous coronary intervention.