Q1: Facility Name: Henry Ford Health System
Q2: Program/Project Name: Tele-Health Cardiac Rehabilitation
Q3: Address
   Address: 6525 Second Ave
   City: Detroit
   State: Michigan
   Zip Code: 48202
Q4: Contact Person's Name: Robert Berry
Q5: Phone Number: 313-972-4107
Q6: FAX Number: 313-972-1921
Q7: Email: rberry5@hfhs.org

PAGE 3: AACVPR Certified Program (10 points)

Q8: Does your Institution operate an AACVPR Certified Program (Cardiac or Pulmonary)? No

PAGE 4: Introduction (10 points)

Q9: (10 points) In 100 words or less please complete the following statement; "We believe our program is unique and innovative because..."

Using a free app for the patient’s mobile device our program is able to conduct remote real time video conferencing (telemedicine) with the patient while they exercise at home or in community facility. For patients unable to attend our facility based program due to lack of transportation, distance to a facility, dependent care responsibilities, and program hours, we are able to service patients who otherwise would not have been cared for. Education is provided through short videos accessed asynchronously on line and the patient is able to discuss the content or ask questions during the video session with their clinician.
Q10: Specify and describe the unique population selected for this program or service. Examples include:
- Clinical populations currently served (CR, PR, and VR)
- Subgroup within CR / PR / VR (i.e. dyslipidemia)
- Primary prevention group
- Other Clinical conditions or populations (Obese, cancer, osteoporosis, etc)
- Children, elderly, women, minorities, underserved (rural), etc

The population served is low to moderate risk patients eligible for Phase 2 cardiac rehabilitation but who are otherwise not able attend a Phase 2 CR program due to distance to a facility, program hours of operation, lack of transportation, or conflicting responsibilities.

Q11: Please specify how this population was identified and how their needs were identified:
Eligible patients are identified from those within the Henry Ford Hospital System using applicable ICD-10 codes. All eligible patients are contacted by the cardiac rehabilitation unit either prior to discharge or as soon as possible thereafter. Patients who are reluctant or unable to commit to a traditional Facility Based CR (FBCR) program are made aware of the Home Based Cardiac Rehabilitation (HBCR) model as an alternative option.

Q12: Please identify other opportunities within this target population (referrals or procedures):
We are also able to decrease wait times in FBCR by transitioning patients into the HBCR model after they have completed several sessions in our facility. Not only does this open up slots in the facility based program to start new patients, it also provides ongoing support and guidance to patients as they transition to independent exercise at home.

Q13: Please explain considerations given to undeserved or rural populations:
The mobile device application and a heart rate monitor are provided at no cost to participants. The elimination of the need to travel to a facility to attend CR makes it possible for low income individuals or those without reliable transportation and/or living in a rural area to participate. Patients who do not have access to exercise equipment participate by walking either indoors or outdoors.

PAGE 6: Research basis for program (up to 5 points)

Q14: Does your program have a research basis: Yes

Q15: If “yes”, please indicate the specific guideline(s), scientific evidence, or research articles used in planning this program. Also include, research that supports that this type of innovative program can be/is effective.


PAGE 7: Collaborative Practice Model (broad community of caregivers) (up to 10 points)
Q16: Describe in detail your model of collaboration; how have you worked to include a variety of caregivers into your program?

The core components of our FBCR program are consistent with those specified by AACVPR and AHA, provided by a licensed psychologist, clinical exercise physiologists, registered dieticians, and a registered nurse. The core components of our HBCR are intentionally identical to our FBCR program, and again engages all the professionals listed above. Typically, the tele-health sessions are conducted by exercise physiologists, however the program is designed to be flexible enough to allow registered dieticians or the registered nurse to “sit in” on the HBCR visit when warranted. For example, the registered dieticians have been available to provide live, real time video consultations to those patients with specific questions regarding diet/nutrition i.e. Celiac disease and advanced heart failure.

The online educational lectures we use were created by partnering the exercise physiologists and the registered dieticians together to create short (five to ten minutes long) videos focused on specific topics (www.henryford.com/creducation). While each set of caregivers had primary responsibility for their respective videos, all the videos were reviewed by all disciplines to ensure that the content was complete and could be understood by patients.

All clinicians are able to schedule an appointment with behavioral medicine during the HBCR video visit if needed. Additionally, behavioral health and/or emergency services are notified instantly via electronic alert if a patient endorses suicidal ideation when completing the post program PHQ-9.

Q17: Who are the caregivers involved in this collaborative process? (identify members of the team):

- CR/PR staff
- Physician
- Health Plan Providers
- Other Health Care Professionals
- Other Ancillary Departments
Q18: Describe (or show evidence of) how participant results are shared among all team members and provide examples of this communication process:

Each HBCR session is documented in the EMR using a program specific template. This template details exercise mode, duration, intensity, and highest training HR and RPE. The educational topic covered during the session is identified along with an assessment of the patient’s understanding of that topic. The plan for the next session, (e.g. change in exercise intensity, or identify the next educational topic to be covered) is established and documented. Within the EMR template there is a free text area available for use if needed. Clinical staff are encouraged to review the previous HBCR session notes prior to each HBCR session.

An example of the HBCR session note is given below:

10/21/2016

ROBERT B BERRY  10/21/16 0815  Signed
Mr. XXXXXX XXXXXXXX participated in a home based cardiac rehabilitation session today at home XXXXXXX reported the following signs/symptoms  None since their last supervised exercise session.

Today's session weight was 164.6 pounds. XXXXXXX reported their heart rate was 67 prior to exercise.

XXXXXX completed 40 minutes of exercise using a treadmill..

The estimated intensity was 3.7 METS on treadmill. This represents an increase of .4 METS on treadmill since beginning the program.

The average Heart rate observed during exercise was 111 bpm XXXXXXX rated today's exercise as 13 on the Borg RPE scale.

XXXXXX reports the following signs/symptoms during exercise None.

Plan: XXXXXX  will Maintain the current intensity.

DARLENE ZIMMERMAN RD 10/21/2016 0833 Signed
Education: Mr. XXXXXX XXXXXXXX has completed some of the educational topics in Cardiac Rehabilitation. The following educational topic Heart Smart Diet, Reading Food Labels and Recipe Modification were discussed and reviewed. XXXXXXX Demonstrates good understanding of this topic.

Addressed XXXXXXX’s questions regarding sodium. Discussed his daily sodium budget of 2,000 milligrams as recommended by his physician. Talked about reading labels and using that daily sodium guideline as a way to determine if a food is low or high in sodium. Discussed adjusting recipes and ways to make foods prepared at home lower in sodium. Discussed the two types of fat that have the greatest impact on heart health – saturated fat and trans fat – and explained the daily targets/intakes for those fats.

XXXXXX explained he was diagnosed with celiac disease in 2003 and avoids gluten. He understands those restrictions, but explained it’s just one more thing he has to think about when it comes to planning meals that he feels confident about eating.

Q19: Are patient self-management strategies included? (including primary prevention, behavior modification, compliance and surveillance)  Yes
Q20: If yes: Provide details of the education process used and explain how it encourages patient self-management. State the process for identifying barriers to learning, determining state of readiness for learning, and identifying patient’s preferred learning style. Identify by what means education information is provided to the patient/participant:

Potential barriers to learning and preferred learning style are identified during a 1:1 patient/clinician meeting prior to starting in CR, during which the program is described in detail along with expectations of both the patient and program staff. The Trans-theoretical Stages of Change model is used to assess readiness for change which is documented in the patient’s individualized treatment plan along with key individualized risk factors.

Education is provided to the patient both online (using five to ten minute duration videos) and during the synchronized tele-medicine video visits. Content such as signs and symptoms to report to physician, importance of medication compliance, strategies to increase medication adherence, methods of accumulating physical activity throughout the day, ways to incorporate healthier food choices into meal planning, and others are included in the videos. The clinician assesses understanding of the video education using a teach back method during the HBCR sessions.

Q21: If yes: Describe behavior modification techniques or interventions used. Explain how patient / participant compliance to treatment plans is tracked and how issues of non-compliance are addressed:

Compliance with interventions developed as part of the Individualized Treatment Plan is documented in the EMR both as part of the daily session note that is completed for each patient (e.g. did the patient view the planned educational video and demonstrate ≥ 50% teach back) and as part of the ITP that is reviewed and signed by the Medical Director every 30 days. To date, non-compliance issues have been very rare, and have been handled using motivational interviewing techniques to assist in identifying compliance barriers and patient originated solutions.

Q22: What is evaluated in your patient outcomes tracking system:

- Enrollment rate of HBCR
- Median number of visits completed in HBCR
- Percentage of patients training at THRR
- MET Level change
- Patient Satisfaction scores

Q23: How is your patient outcomes tracking system measured?

Outcomes from both our FBCR and HBCR are entered into the Henry Ford Preventive Cardiology outcomes database, with the exception of the Enrollment rate of HBCR which is calculated from the number of eligible patients identified at CR orientation.
Q24: Describe your outcomes to date (provide "n," pre- & post-values, %change, & supporting narrative):

MET level change (n = 5): Pre-MET average = 3.22, Post-MET = 4.74 Percent change = 45% (range 21% to 114%).
MET level change not reported for 2 participants secondary to home exercise equipment not displaying exercise intensity in a unit (e.g. watts) that can be converted into METs.
The absolute magnitude of the MET level change in HBCR is 1.5 MET compared to 1.3 MET in FBCR, and the percentage change is similar (45% versus 53%).

Patient satisfaction scores are listed in the table below. This outcome uses a 5 point Likert scale. 1 = Great, 2 = Good, 3 = OK, 4 = Needs help, 5 = Poor.

<table>
<thead>
<tr>
<th></th>
<th>HBCR (n = 5)</th>
<th>FBCR (n = 205)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation meeting</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td>What to expect</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td>Exercise time use</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Education provided</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td>Exercise improvement</td>
<td>1</td>
<td>1.4</td>
</tr>
<tr>
<td>Understanding health issues</td>
<td>1</td>
<td>1.5</td>
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<tr>
<td>Recommend program</td>
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<tr>
<td>Able to see provider</td>
<td>2</td>
<td>n/a</td>
</tr>
<tr>
<td>Able to hear provider</td>
<td>1.5</td>
<td>n/a</td>
</tr>
<tr>
<td>HBCR session convenient</td>
<td>1</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Q25: Describe your program/process-related outcomes - how do you know your program is successful (how did your patients do)? Describe outcomes to date (provide pre- & post-values, %change, & supporting narrative):

Enrollment rate for HBCR is 41% (7 of 17) of the eligible candidates identified at program orientation as being unable/unwilling to commit to attending FBCR.

The median number of visits completed in HBCR program = 27, this compares favorably with the median number of visits in our FBCR program = 21.

Percentage of patients training within their THRR is 71%. This compares favorably to the facility based CR, where ~35% of the patients are utilizing a GXT derived THRR. Training using a THRR derived from a GXT has been associated with greater MET level increases in CR.

Two patients did not undergo pre-program cardiopulmonary stress testing to determine THHR. One patient due to symptomatic PAD which was the limiting factor in his exercise tolerance as opposed to HR, and one patient due to balance issues on the treadmill and neuropathy in her feet which prevented her from being able to maintain a steady RPM on a cycle ergometer.

Q26: Describe the evidence of Operational Benefit gained from this program (e.g., growth documented by increased visits or patients; enhanced efficiency and process as evident by improved productivity; improved customer and/or physician satisfaction):

There were 143 tele-health patient visits completed in the program between 01 Oct 2016 and 31 Mar 2017. Annualized, this suggests nearly 300 additional patient visits are to be completed by patients who declined FBCR. This represents 5% growth in Phase 2 volume at the site conducting the tele-health visits.
Q27: Describe the evidence of Financial Benefit gained from this program (e.g., return on investment (how it is measured); description of revenue or reimbursement sources; indication of cost savings, in-direct revenue enhancement elsewhere in organization; any evidence of payer cooperation or support):

The HBCR program is reimbursed by two payers; Health Alliance Plan (HAP) of Michigan and Blue Cross Blue Shield of Michigan (BCBS MI). Both payers reimburse the service at the same rate as they do for our FBCR when the CPT code 93797 is used.

HAP and BCBS MI have been extremely cooperative and supportive of this program from the outset by agreeing to cover the CPT codes used for the program despite those codes not being included in Michigan’s Tele-Health Parity law. They also allowed the program to start proof of concept testing prior to the video component being available. BCBS MI and HAP also assigned a senior staff physician as a liaison to assist with billing, coding, or reimbursement issues arising from this new delivery model.

Participants in the HBCR program are given a pre-program participation cardiopulmonary exercise test to assess exercise tolerance and to determine the patient’s THRR. This represents ~ $800 per test of revenue for the Preventive Cardiology department.

Q28: Describe the evidence of Health Benefit gained from this program (e.g., increased health awareness and/or decreased health risk; improved health of community (or population targeted) as evidence by improved health knowledge and/or behavior; decreased hospital, physician or ER visits):

The health benefit of this program is based on the premise that HBCR is extending the reach of our FBCR program, which itself is operated in a manner consistent with the literature stated benefits of reductions in all-cause death and hospitalization. However, it is delivered to patients who would not participate in any CR due to an identified barrier to participation in FBCR. The HBCR collects the same metrics and follows the same methods as FBCR, and the outcomes for both programs are quite similar.