

Julie Michelle O'Bryan, MS: a conversation with the editor on cardiac rehabilitation at Baylor University Medical Center

William Clifford Roberts, MD (hereafter, WCR): Julie, I appreciate your willingness to talk to me and therefore to the readers of BUMC Proceedings (Figure). Before we get into the rehabilitation program here at Baylor University Medical Center (BUMC), let me ask a few questions about you. When were you born and where did you grow up? What was your training in college and thereafter?

Julie Michelle O'Bryan, BS, MS (hereafter, JMO): I was born June 5, 1975, in Dallas and grew up in Richardson, graduating from Berkner High School. I received my bachelor of science degree in exercise and sport science at Texas Tech University. I did an internship immediately thereafter at Presbyterian Hospital in Dallas. After the internship I returned to Tech to get my master's degree in clinical exercise physiology, which focused on cardiac rehabilitation. Tech was a good place to study because the Lubbock area has 2 major hospitals with cardiac rehabilitation programs.

WCR: What did you have to do to get your master's degree?

JMO: Besides the classes, I had an internship at University Medical Center in Lubbock. After the internship I continued to work at that hospital until I earned the master's degree. I took classes in exercise physiology, gross anatomy, stress management, nutrition—all components of rehabilitation.

WCR: Are you an athlete yourself?

JMO: I played lacrosse at Tech for 6 years.

WCR: How did you get to BUMC?

JMO: While I was working in the cardiac rehabilitation department in Lubbock, my boss, Blaine Wilson, served on the board of the Texas Association of Cardiovascular and Pulmonary Rehabilitation with Wendy Segrest. He heard from Wendy that there was going to be an opening at BUMC for an exercise physiologist. I sent my resume in, interviewed, and got the job. When I started I was a clinical exercise physiologist. After Wendy Segrest left, I was promoted to manager of cardiac rehabilitation and the Leap for Life program.

WCR: How long have you been at BUMC?

JMO: I came in May 2000.

WCR: When did you come into your present position?

JMO: Officially on May 11, 2001. I was the interim supervisor from March to May 2001. Remy Tolentino, BUMC vice president, decided that I would be a good fit for this position.

WCR: How many people in cardiac rehabilitation report to you?

JMO: There are 2 nurses, 2 exercise physiologists, a dietitian, a social worker, and 2 medical secretaries. I share Jenny Adams,

our PhD in exercise physiology, with Linda White. Two nurses fill in when someone is out. That is 9 full-time positions.

WCR: I appreciate your taking me around to see the physical environs of the Walter I. Berman Cardiovascular Prevention and Rehabilitation Center. Have you seen another cardiac rehabilitation department as good as this one?

JMO: No. We are so lucky to be in the Landry Center. It gives us some "extras" to work with.



Figure. Julie Michelle O'Bryan during the interview.

PATIENT POPULATION IN CARDIAC REHABILITATION

WCR: Who receives standing orders for cardiac rehabilitation?

JMO: Right now, only the patients who have had a coronary bypass. Any patient can be referred, but the patient's physician has to write the order for our service.

WCR: Please describe your patient population.

JMO: About 50% of our referrals are post-bypass patients, but only about 40% of those referrals attend rehabilitation here at BUMC. About 12% of our referred patients have stable angina, and about 6% have had myocardial infarction. We also get some patients with heart failure, but, again, they are not automatically referred to us. A small percentage of patients have had valve replacement or repair without cardiac disease. Physicians may also refer patients who have had carotid endarterectomy, abdominal aortic aneurysm resection, or peripheral arterial operations. Frequently, when patients receive such diagnoses, it is because they also have coronary artery disease. Every BUMC cardiac transplant patient comes through rehabilitation; it is part of their program, and we've worked out a deal with the transplant group so that they come whether or not they have insurance.

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WCR: *Why can't you get standing orders at BUMC for referral to cardiac rehabilitation for patients who have been admitted for unstable angina, acute myocardial infarction, coronary angioplasty, or heart failure?*

JMO: Ideally, we should be able to. But the majority of cardiologists need to agree to that course, and thus far we have not obtained that required agreement.

WCR: *At this point, the cardiologists haven't agreed to it or it just hasn't come up?*

JMO: We have not pushed adequately for that agreement among the cardiologists. There are some cardiac surgeons who will cross off the order for their patients to come to rehabilitation after their coronary bypass operation. We don't know why they do that. Sometimes the patients may have other physical limitations that may prevent them from attending rehabilitation.

WCR: *Why don't more physicians refer patients to cardiac rehabilitation?*

JMO: They might not know about the program and its benefits. We need more physician exposure to let them know what is involved in the program and that it is safe. Many physicians apparently feel that their patient for one reason or another couldn't complete the activities in the program. When you get someone who has been deconditioned for several months to several years, it is wonderful when they are able to come back and do the things they were able to do before the coronary bypass surgery. Some patients are a lot better off after rehabilitation than they were before their coronary problem was diagnosed.

WCR: *Most of your patients live in the Dallas area. Do you occasionally get a patient from far away?*

JMO: Yes. We've had people come from Corsicana or Wills Point, either because they work in Dallas and this facility is on their way to work or because there are no rehabilitation centers close to where they live.

WCR: *What's the average age of your patients?*

JMO: Around 60 years. About 70% of them are retired. Most of the other 30% are working. When they first start, they might not be back to work yet because their physician hasn't released them to return to work.

WCR: *What's their average body mass index?*

JMO: Most of them are considered obese.

WCR: *What percentage of your patients are men?*

JMO: About 65% are men and 35% are women.

ENROLLMENT, ORIENTATION, AND CASE MANAGEMENT

WCR: *What is the interval from the time patients leave the hospital to the time you contact them? How long after that do they begin rehabilitation?*

JMO: We try to contact referred patients within 48 hours of discharge. They come in as soon as they are ready; usually they like to go back to their surgeon or other primary physician first. We have patients in as soon as 2 weeks after surgery but usually 3 to 4 weeks after surgery.

WCR: *If patients don't want to come to BUMC (Landry Center) because it's too far away from their home, do you refer them to another cardiac rehabilitation center?*

JMO: We would, of course, like for them to stay in the Baylor system if there is a center close to them. We'll refer them to the

rehabilitation center closest to their home. We don't get any compensation for that.

WCR: *What percentage of those called actually come in?*

JMO: About 17%.

WCR: *What's the first step in the process?*

JMO: The medical secretaries schedule an initial orientation with the patient. During the orientation, one of our clinical staff—a nurse, an exercise physiologist, or a dietitian—takes the patient to the consult room. Family members are welcome. We'll get a medical history. Our medical secretaries send a 4-page questionnaire to the patient's home if there is enough time before the initial consult. The questionnaire requests information on all the cardiac procedures the patient has had. We ask patients questions about atherosclerotic risk factors. We find out if they are in any pain presently and what is causing the pain. We check on their medications. We also ask what they are interested in learning about their condition and describe the cardiac rehabilitation program—what they can expect when they come and how long they'll be here. We describe the Leap for Life class that we would like for them to attend. Finally, we tell them about the dietitian and the social worker that are available, and we encourage them to see them. The orientation takes 30 to 60 minutes.

WCR: *How many patients do you have in your program now?*

JMO: Between 60 and 65. They come 3 times a week—Mondays, Wednesdays, and Fridays. The number of weeks they participate depends on several factors. Everyone's participation is individualized. Some patients' insurance policies approve them for only one session and others for up to 12 weeks (36 sessions). We don't get all 60 coming in for every session. They may have complications, be sick, or have a doctor's appointment. We see about 45 to 50 patients a day in 5 different classes: at 8:00, 9:30, and 11:00 AM, and 1:00 and 2:30 PM. Classes last for about an hour.

WCR: *What do you do on Tuesdays and Thursdays?*

JMO: We do the initial 1-hour orientations on Tuesdays and Thursdays; staff members take turns, so each does 2 or 3 a week. The dietitian and I also do one a week. Staff also do their case management updates on Tuesdays and Thursdays. Each person manages up to 20 people. They go through patients' exercise cards to make sure each is progressing the way he or she should. They ensure that the patients receive their dietary consult and go through the class. If they need to get in touch with a patient's physician because the patient is having symptoms or they want to get lab results, they call the physician's office.

Once a week, we have a case management meeting at which all the clinical staff get together, including the dietitian and the social worker, to discuss how each participant is doing in rehabilitation. The dietitian may need to bring up something that is going on, or maybe a person is depressed and the social worker needs to be informed. We also have a process improvement meeting every Thursday morning at which we discuss ways to improve our efficiency and effectiveness and to increase satisfaction for both the patients and ourselves.

DIETITIAN AND SOCIAL WORKER SUPPORT

WCR: *You mentioned a dietitian and social worker. Every patient who comes through your program spends time with each of them.*

JMO: Yes. Each participant is scheduled for at least one meeting with the dietitian and one with the social worker. Those

meetings last anywhere from 20 to 120 minutes and are usually scheduled right before or right after an exercise session.

WCR: *What does the social worker talk to patients about?*

JMO: Each participant fills out a Geriatric Depression Scale form to help determine if they are depressed, a common finding. Many of these patients, of course, continue to have cardiac problems, and these are discussed. They might need help obtaining medications or dealing with other problems.

WCR: *Suppose a patient is clearly depressed. What does the social worker do about that?*

JMO: She would first see if the patient's physician is aware of the depression. She might discuss with the physician the need for antidepressants. The social worker usually meets with the depressed patients more than once.

THE LEAP FOR LIFE EDUCATIONAL PROGRAM

WCR: *What is the Leap for Life program?*

JMO: It is a program developed at BUMC that stresses healthy living for people recovering from cardiac events or operations. The 4-hour program covers cardiac disease, cardiac procedures, medications, risk factors, exercise, stress management, and nutrition. We offer it twice a month on a Thursday afternoon or a Saturday morning.

WCR: *It's a onetime program?*

JMO: Yes and no. It's a onetime sit-down session, but it also includes a follow-up program. Everyone coming through the Leap for Life program is followed for a year. Participants establish baseline goals, and at 3, 6, 9, and 12 months, we contact them by phone or mail to learn how they are doing on their goals.

WCR: *Give me an example of goals a particular patient might have.*

JMO: One goal could be to exercise 3 times a week for 30 minutes each time. The person following up would find out how the patient is doing on that goal and maybe send him or her some information on exercise. Another goal might be to lose 30 pounds. We give information on diet and exercise to individuals who wish to lose weight.

WCR: *Who teaches the class?*

JMO: All of the staff. We switch off for the different sections. The nurses teach the cardiac part; the exercise physiologists, the exercise portion; the dietitian, nutrition; and the social worker, stress management. Because each staff member covers a portion, no staff member talks for longer than an hour or so. We like to have one facilitator who is there for the whole time to help coordinate everything.

WCR: *Do most patients who go through the exercise portion of the rehabilitation program also come to the 4-hour Leap for Life class?*

JMO: Probably 75% do. We encourage it. Some may feel that they don't need it or that they have a conflict with work and cannot come.

WCR: *The Leap for Life program is a perk for your regular rehabilitation program.*

JMO: Yes.

WCR: *Who pays for the Leap for Life program?*

JMO: As of July 1, 2001, Leap for Life at BUMC is under cardiac rehabilitation, and the cardiac rehabilitation department is paying for it. Prior to that, Leap for Life was a separate depart-

ment under the Baylor Health Care System Foundation and survived on donations. All of the Baylor entities—Baylor Garland, Baylor Irving, Baylor Grapevine, and Ellis County—were using BUMC's Leap for Life program, and one person did the follow-up calls for everybody who attended the educational sessions. We now have decentralized that program: BUMC does its own Leap for Life program and the other Baylor hospitals do their own.

WCR: *Are you going to charge the patients additionally for the Leap for Life class?*

JMO: No. Education is an important part of cardiac rehabilitation.

WCR: *Can an individual take the Leap for Life program without going through the rehabilitation program?*

JMO: Yes. Every patient having a cardiac procedure at BUMC gets a letter inviting him or her to the class and providing him or her with the 1-800-4BAYLOR number. The community Leap for Life class is only on Saturday mornings, and it is held once a month.

WCR: *Is Leap for Life a good way to get patients into cardiac rehabilitation?*

JMO: A lot of the patients coming to the Leap for Life class ask about the cardiac rehabilitation program. However, patients must get a referral from their physician before they can enroll in rehabilitation.

WCR: *How many participants does a Leap for Life class have?*

JMO: It ranges from 5 to 40 people each class. Saturday is our bigger class. We invite the spouse or another family member to come with the patient.

WCR: *Has Leap for Life been a successful venture?*

JMO: Yes.

THE EXERCISE PROGRAM

WCR: *Once patients have been oriented, they come back for their exercise program. What happens?*

JMO: The first day they come into the exercise room, volunteers show them how to put on the telemetry monitor.

WCR: *Who are the volunteers?*

JMO: We have 5 volunteers who come from volunteer services at BUMC. One or two are present at each session. All of them have gone through cardiac rehabilitation and, therefore, they know the program. The volunteers train the new patients on what types of exercises are available. They show them the location of the scales, chairs, and the locker room and show them how to get ready for exercising. They also show them how to take their heart rate. They prepare the participants for the staff. We like to start only 1 new person per class.

WCR: *What's the capacity of your exercise room?*

JMO: Sixteen patients can be on a monitor at any one time. Most sessions have 10 to 12 participants. Once all of our classes are at capacity, we'd like to add 1 or 2 more classes. We could fit additional classes in on Mondays, Wednesdays, and Fridays. We have discussed adding a phase III program, in which graduates would come in on Tuesdays and Thursdays and exercise without the monitor. Right now we are doing only phase II cardiac rehabilitation. Phase I rehabilitation takes place in the hospital. Currently, we don't have a phase I program at Baylor.

WCR: *What clothes do the patients exercise in?*

JMO: Whatever they feel comfortable in. We encourage tennis shoes. Some people like to exercise in jeans, others in shorts and T-shirts.

WCR: *When walking through your exercise room, I saw 6 different machines, including a treadmill and a bicycle (a Schwinn Air-dyne). What else do you have?*

JMO: We have a different kind of bicycle that is called a Windsprint. The Air-dyne uses both arms and legs; the arms go back and forth while the legs pedal. The Windsprint uses only the legs. It can be used by patients who have recently had coronary bypass and whose sternums are not yet completely healed. We also have a machine called the Nu Step that allows movement of both arms and legs with resistance while sitting down. We have the regular StairMaster. We have a rowing machine. We also have hand weights, and we have use of the circuit weight machines in the Landry Center in which separate weights are not lifted.

WCR: *How many different types of weight machines do you have out where the track is?*

JMO: About 15.

WCR: *Who instructs patients on how to use your machines?*

JMO: The staff, usually the exercise physiologists. We find out what exercises interest the patients, and we show them the proper machines for those. We may add more later on.

WCR: *When patients first come in, how do you decide which machines to put them on?*

JMO: We usually try to put everybody on the treadmill and one other piece of equipment. It might be the Air-dyne bicycle or a different bicycle that requires no arm movement. Patients with walking problems from arthritis or leg incisions may not be placed on the treadmill. We'll try everybody on the treadmill except those who have a walker and those who are not stable enough to walk on a treadmill. Almost everybody goes on a bicycle. We wait 4 weeks after coronary bypass before placing them on the Air-dyne bicycle, which requires arm movement.

WCR: *How do you determine whether a person initially does 10 minutes, 2 minutes, or 30 minutes on a treadmill? What is your goal for all of these patients?*

JMO: Our goal is to work them up to 40 to 45 minutes of aerobic exercise, whether all on one piece of equipment or split between two. The first day, we'd like them to go at least 10 to 15 minutes, but some people are really deconditioned and are able to go only 2 minutes. It is up to them how long they can do it. As long as they aren't having symptoms, we'll let them go as long as they would like to. If they do have chest pain or we notice some irregularities on their electrocardiograms, we'll slow them down or stop them.

WCR: *Is any other type of monitoring done?*

JMO: We also monitor all patients' blood pressure and heart rate. We do resting and exercise blood pressures, and another blood pressure after they finish exercising. We use the Rating of Perceived Exertion Scale, a good measurement of how hard patients feel they are working. A 0 would be sitting down in a chair not doing anything at all. A 10 would be the hardest physical thing they have ever done in their life. We ask them on every piece of equipment how hard they feel they are working. We can also use the standard pain scale—from 0 to 10—if they are having pain.

WCR: *Chest pain?*

JMO: Any kind of pain. We can monitor dyspnea also. We are looking for so many different things all the time. We look at their faces to see if they are grimacing from pain.

WCR: *If you have 16 patients exercising and you have 2 nurses and 2 exercise physiologists, each of your 4 staff members has 4 patients. Is that correct?*

JMO: Yes.

WCR: *They follow them through their entire 12-week exercise program?*

JMO: Each staff member might be "case-managing" a particular patient, but on the day that patient comes in, any staff member can work with him or her.

WCR: *Let's say in the beginning a patient can do only 5 minutes on the treadmill and you want to get him up to 40 minutes. He is going to take at least 12 weeks to do that. Is that right?*

JMO: Possibly. Different people progress at different rates.

WCR: *I presume you encourage patients to exercise at home on Tuesdays and Thursdays.*

JMO: Yes, as long as we feel it is safe for them to do so. We encourage them to exercise as much as they feel up to it—walking or bicycling particularly. We tell them to make sure to use the Perceived Exertion Scale to measure how hard they are working. If they are working above a 7, they are working too hard and need to slow down. At a 2 or a 3, they can go a little bit faster. That's a good way patients can rate themselves. If they are having any symptoms, they need to stop and inform their physician. Or, they can call us. Basically, as long as they feel up to it, they can do it. We use something called the "talk-versus-sing" rule. When they are exercising, they should be able to talk to somebody; if they can't talk, then they need to slow down. If they can sing, then they can work a little harder.

WCR: *If I was in really good shape and my resting heart rate was 60, what would it get up to with exercise?*

JMO: We'd like to get it up to 90 at least. But if you are on a beta-blocker, it might never get that high.

WCR: *Suppose it doubled to 120, would you worry about me or would you be pleased?*

JMO: We would look at all the other physiological factors. If your electrocardiogram is fine, your blood pressure is fine, you're not dyspneic, you're not having chest pain, and you're feeling great, we'd probably let you keep going.

WCR: *Suppose it got up to 150 and I still had no chest pain, my electrocardiogram showed no ST-segment or T-wave changes, my blood pressure was still okay. What would you do?*

JMO: We would definitely get in touch with your physician and see if he or she could do a stress test on you or if he or she would give us permission to do an exercise tolerance test here. Probably you are fine if you're not having any symptoms, but we would want to double check to make sure that that heart rate is safe for you.

WCR: *Let's say my blood pressure at rest is 120/80 mm Hg. I'm exercising and my heart rate is 90. (It has increased by a third.) What would you want my blood pressure to be doing?*

JMO: We'd want the systolic to be increasing while you are exercising but stay <200 mm Hg. The diastolic usually remains near the resting level during exercise. It might drop or rise about 10 mm Hg at most.

WCR: Ideally, I gather, you want the patient to stay 12 weeks, exercising 3 times a week here.

JMO: Not necessarily. Some patients are not going to progress here after 9 weeks. They may have attained all their goals and all our goals without having any problems. There is no reason for them to continue coming as long as they continue exercising on their own. If so, they can go ahead and graduate from our program. We have some patients who need the 12 weeks, and we will keep them here for the entire 12 weeks. The average time that most people stay in the program is 6 to 9 weeks.

EXERCISE TOLERANCE TESTING

WCR: Do you do stress tests on all cardiac rehabilitation patients?

JMO: No, we don't. It may be that they just had surgery a couple of weeks previously and they're not ready to have one or the physician doesn't think they need one at that time. We would love to, but we don't. If they do have an exercise stress test, we can calculate the target heart rate for them. We have a formula for that. Another safe way would be to get it 30 beats above their resting heart rate.

WCR: How often do you do exercise stress testing?

JMO: Maybe one a month. We would do the test if a patient wants to do more exercise and we are holding him or her back because the heart rate is getting too high. We would have to get an order from the patient's private physician to do the exercise tolerance test here. We would schedule it for a Monday, Wednesday, or Friday morning when we have a cardiology fellow here. The fellow monitors the stress test the entire time. We are not doing it for diagnostic purposes. We're strictly doing it to see what the patient's exercise tolerance is: to see how high we can get his or her heart rate safely. If the patient did happen to have some chest pain or any other problems during the test, a physician would be available. We haven't had any problems with that.

WCR: Is a person stressed more during exercise testing or during rehabilitation-type exercising?

JMO: Exercise testing is more stressful.

WCR: Have you ever had an exercise stress test?

JMO: Yes. I made it to the fifth stage out of 8 or 9 stages.

WCR: Are there any cardiac rehabilitation units in the country that do an exercise stress test on everybody?

JMO: In Lubbock, one private hospital-based program that I know of does it. I don't know what kind of patients they take. I don't know if they are private pay or Medicare.

WEIGHT LOSS

WCR: What do you do to help patients lose weight?

JMO: All participants meet with the dietitian. She gives them lots of information on different diet plans that would be right for them. They are all exercising at least 3 days a week. They all weigh every day so they are pretty aware of whether their weight is increasing or decreasing.

WCR: Are you successful in 9 or 12 weeks in getting them to lose weight?

JMO: Most of them won't have much weight decrease, and that is frustrating for a lot of them. A few people lose 10 to 20 lb. The more obese the patient, the more weight he or she loses generally.

WCR: You have to walk 35 miles to lose 1 lb—that is, without stopping at McDonald's on the way. Exercise, in actuality, is not a very good way to lose weight.

JMO: You are correct.

MANAGEMENT OF DIABETES AND HYPERCHOLESTEROLEMIA

WCR: I saw in your laboratory that you can do blood glucose and cholesterol determinations. How often do you do these determinations in your department?

JMO: Glucose testing is done on all the diabetic patients. About 35% of our patients are diabetic. We spend a lot of time teaching these patients about diabetes. Some have not received much education on the topic. The first day they bring in their glucometer and we test ours against theirs to make sure theirs is accurate. If not, a company has donated several glucometers to us to give to the people who can't afford to replace an inaccurate one.

WCR: If the patient doesn't have a diagnosis of diabetes mellitus, you don't test the blood sugar.

JMO: Correct.

WCR: Whom do you test for cholesterol levels?

JMO: Not too many patients, but we have the ability to do the test for any patient in rehabilitation. First, we try to get a current lipid panel from the patient's physician. If the physician hasn't done one and is not planning on doing one any time soon, we do it here.

WCR: Do you send the results to the patient's private physician?

JMO: Yes. If we notice that the cholesterol is really high, we'll make sure that the physician is aware of it and see if he or she wants to put the patient on lipid-lowering medication.

MEDICAL OVERSIGHT OF CARDIAC REHABILITATION

WCR: Do you have a cardiologist here in your department all the time that patients are exercising?

JMO: No. We have a cardiology fellow physically in our department for our first class from 8:00 to 9:00 AM on Mondays, Wednesdays, and Fridays. Heart Place, the large cardiology practice on the second floor of the Landry Center, starts seeing patients at 9:00 AM. One of those physicians is assigned to cover rehabilitation each month. Thus, if we do have a problem, our front office staff will page the assigned physician, who comes here within a couple of minutes.

WCR: I noticed that you have cardiac resuscitation equipment in the exercise room, in your classroom, and in your exercise testing room. Do you ever have to use that equipment?

JMO: Rarely.

WCR: You've been here a little over a year. Has any participant in your cardiac rehabilitation program required resuscitation since you have been here?

JMO: No. Only once has a patient had to be defibrillated in the program, and that was 2 or 3 years ago.

WCR: Cardiac rehabilitation was started by Dr. Walter Berman. Is anybody going to take Dr. Berman's place?

JMO: No one person. He was the medical director for cardiac rehabilitation. What we have done is create the medical advisory council, which is made up of several physicians. The council meets once a quarter and discusses what is going on in the cardiac rehabilitation program.

WCR: *Who is on the advisory board?*

JMO: Ten different cardiologists and general internal medicine physicians.

WCR: *Is the medical advisory board useful to you on a day-to-day basis?*

JMO: Yes. If I have a problem I usually ask one of the physicians on the advisory council. Two physicians on the council also are part of the Heart Center leadership meeting, which takes place every other week.

PAYMENT FOR AND EXPENSES OF CARDIAC REHABILITATION

WCR: *Who pays for cardiac rehabilitation? I presume that most of your patients are in the Medicare population, that is, aged 65 and over. Is that correct?*

JMO: Yes. We also have patients who have private insurance. Many of our patients are young and currently employed.

WCR: *What does Medicare pay you for rehabilitation?*

JMO: Medicare pays \$31 per session for 12 weeks, a total of \$1116.

WCR: *Can you survive on \$31 a session?*

JMO: No, but about 80% of patients on Medicare have supplementary private insurance. Medicare pays \$31 per session, and the private insurance usually picks up the rest.

WCR: *If you have only private insurance but no Medicare, how much do you charge?*

JMO: Everybody is charged \$111.50 a session, which would be \$4014 for 12 weeks.

WCR: *To run a cardiac rehabilitation program is a pretty expensive operation. You have 6 well-trained staff, yourself, and 2 medical secretaries. That's a big payroll. How many square feet of space do you have here?*

JMO: About 6000 square feet.

WCR: *You are getting \$111.50 for some sessions and for others you are getting only \$31 a session. This is not a moneymaking operation for the hospital, is it?*

JMO: It is now. Most cardiac rehabilitation programs are not. We are now operating in the black. The last director put us in the black by making many changes. For example, we added standing orders for coronary bypass patients, which increased the number of participants that we have in the program. We added another class so that we can have more people exercise each day. Computerizing much of the paperwork has saved our time. I believe that earlier the nurses were doing all the precertification calls for insurance, and now the medical secretaries do that.

WCR: *Now is the first time this program has ever been in the black since it started in 1976?*

JMO: I think so.

WCR: *Do you consider cardiac rehabilitation a growth operation? Do you think it will expand?*

JMO: I think so. We are looking into adding a peripheral vascular rehabilitation program here. Anybody can come to cardiac rehabilitation, but insurance is a problem. If patients are willing to pay out of pocket or if they have good insurance that will cover it, we're fine with having them come. The main fo-

cus now is cardiac disease, but peripheral vascular disease needs more attention.

WCR: *Are any efforts being extended to get Medicare to pay more for cardiac rehabilitation?*

JMO: That's an ongoing battle. Within the past year, Medicare decreased its reimbursement amount. It's unfortunate.

OUTCOMES

WCR: *How beneficial is your cardiac rehabilitation program? Are the patients satisfied with it?*

JMO: It is very beneficial. Nearly all patients graduating from the program feel they have benefited. They tell us. Many of them send cards and letters. We've discussed sending out a satisfaction questionnaire, as is done after the Leap for Life program.

WCR: *Do you have any handle on how many participants keep exercising once they leave your program?*

JMO: We have 1-year follow-up information on people who take the Leap for Life class. Unfortunately, I have a feeling that many of them do not continue exercising. We see a lot of former participants because they join the Landry Center. I'd like to think it is better than half, but I really don't know.

WCR: *Are you doing any research studies? Are there any data showing that those who went through cardiac rehabilitation survive longer and have fewer symptoms and occurrences of coronary events than those who didn't go through it?*

JMO: Several such studies have been done. We have just finished collecting data for the cardiovascular outcomes measurement program. We are following patients for 1 year, comparing a group that completed the cardiac rehabilitation program, a group that completed only the educational program, and a control group that received neither intervention. We'll find out how many times patients in each group have been readmitted to the hospital and examine other metrics such as blood pressure, blood cholesterol, and body weight. We hope that by April or May 2002, we'll have all of that together and ready to report. Jenny Adams, PhD, is in charge of that study.

We are about to start a new study called the heart rate variability study. Basically, heart rate varies with the breathing cycle; lower variability is useful in predicting heart disease. We have software that measures differences in the heart rate during each breath. One group of cardiac rehabilitation patients will receive breathing training; a tape will tell them when to breath in and breath out. A control group will not receive the intervention.

WCR: *What change is normal for the heart rate during inspiration?*

JMO: We want the heart rate to increase during inspiration and decrease during expiration. I've noticed that in a lot of cardiac patients, there is no change. It stays the same whether they are breathing in or out. The more the heart rate changes, the better off a person is.

WCR: *Who is supporting your research efforts?*

JMO: We received a grant through the Baylor Cardiovascular Research and Education Fund.

WCR: *Julie, thanks a lot.*

JMO: Thank you.