

## BEST PRACTICES

# Managing Patients with Multiple Chronic Conditions

## AFFINITY MEDICAL GROUP CASE STUDY

### Organization Profile

Affinity Medical Group is a team of more than 250 health care professionals providing medical care through a network of 26 clinics in 12 northeast Wisconsin communities. The medical group is part of Affinity Health System, a regional Catholic organization that also includes 3 hospitals and an insurance plan. The health system has successfully transitioned its primary care sites to become medical homes. Eleven Affinity clinics have received Level 3 Physician Practice Connections®—Patient-Centered Medical Home Recognition for their medical home models from the National Committee for Quality Assurance (NCQA).

Affinity Medical Group is currently rolling out a new electronic health record (EHR), Centricity EMR. The majority of the clinics, however, are still using Meditech.

### Project Summary

Affinity Medical Group's COURAGE Clinic aims to reduce the progression and development of coronary artery disease (CAD) and to reduce health care costs through optimal medical therapy. It is based on findings of the COURAGE (Clinical Outcomes Utilizing Revascularization and Aggressive Drug Evaluation)<sup>1</sup> trial involving 2,287 patients with stable but significant CAD, who were randomized either to undergo percutaneous coronary intervention (PCI) or to receive optimal medical therapy alone.<sup>1</sup> Results showed PCI was not superior to optimal medical care alone.<sup>1</sup> The COURAGE Clinic is tailored to patients who have or are at high risk for cardiovascular disease. The 12-month program consists of 6 office visits focused on chronic disease management and personalized education.

Provided as an educational resource by Merck



## Program Goals and Measures of Success

Multiple risk factors have been associated with the increased risk of development and progression of CAD. Guidelines such as ATP III have categorized these risk factors into 3 groups<sup>2</sup>:

Major Risk Factors	Life-Habit Risk Factors	Emerging Risk Factors
Smoking	Obesity	Lipoprotein(a)
Age	Physical inactivity	Homocysteine
Family history of CAD	Atherogenic diet	Prothrombotic factors
Low HDL		Proinflammatory factors
Hypertension		Impaired fasting glucose
		Evidence of subclinical atherosclerotic disease

Two accepted means of preventing cardiovascular events and/or progression of CAD are revascularization (ie, coronary artery bypass graft surgery or PCI) and intensive management of modifiable risk factors (ie, optimal medical therapy). The COURAGE trial, a large randomized trial, assessed whether revascularization with optimal medical therapy was superior to optimal medical therapy alone in the prevention of cardiovascular events in high-risk patients with stable, documented CAD.<sup>3</sup> Optimal medical therapy consisted of aggressive, multidrug treatment as well as lifestyle modification therapies to reach optimal control of cardiovascular risk factors. No significant differences in composite endpoint of death, myocardial infarction and stroke ( $p=0.62$ ), hospitalization for acute coronary syndrome ( $p=0.56$ ), or myocardial infarction ( $p=0.33$ ) were seen between the 2 groups.<sup>1</sup> It was concluded that revascularization, when added to optimal medical therapy, was not superior to optimal medical therapy alone.<sup>1</sup>

Based on the ATP III guidelines and the findings of the COURAGE trial, it would be reasonable to utilize optimal medical therapy in all high-risk patients, not only to lower the incidence of cardiovascular events but also to reduce overall health care costs. Even the mainstream press has acknowledged the impact of this approach and has raised the question

of why more health care providers are not embracing the COURAGE model.<sup>4</sup>

Although the care standards achieved in the COURAGE trial were accomplished at a variety of sites, all apparently were academic settings. As a recent *Journal of the American College of Cardiology* editorial stated, most individual practices are ill-equipped to deliver the intensive, longitudinal care offered in COURAGE.<sup>5</sup> Affinity Medical Group's challenge has been to provide the same standard of care in a nonprofit, multidisciplinary clinic.

## Goals and objectives

1. Provide patients with a year-long program of education on chronic disease states, personal risk, life-habit risk factors, and family history.
2. Offer standardized, aggressive, guideline-driven chronic disease management to:
  - prevent myocardial infarction and other cardiovascular events
  - control CAD symptoms
  - reduce future revascularizations

3. Provide personalized, interdisciplinary care including:
  - case management by a registered nurse (RN)
  - one-on-one counseling by a registered dietitian (RD)
  - guided exercise prescriptions by an exercise physiologist (EP)
  - medication management by a pharmacist (PharmD)
  - oversight by cardiology and lipidology physician champions
4. Identify and reduce residual CAD risk or cardiometabolic risk:
  - Identify and address combined dyslipidemias through usual lipid panels as well as advanced lipid testing
  - Screen for and treat prediabetes, metabolic syndrome, and/or uncontrolled diabetes mellitus

To meet these goals, Affinity utilized a LEAN mentality consisting of process flow mapping, implementation of standard work, protocols and education materials, and development of process and outcome metrics. The COURAGE Clinic is focused on delivering personalized care to each patient with minimal redundancies in the type of education given, history taken, and forms completed. This coordinated and structured team approach is both convenient and efficient for the patient. In addition, the focus on identification of and lifestyle modification for treatment of prediabetes and metabolic syndrome adds to the cost savings.

### Patient outcomes

Currently all data are stored in spreadsheets. Data analyzed thus far include those from patients who have reached 9-month (n=62) and 12-month (n=44) points in the program as of March 2011. Demographics of all patients are noted below.

Outcomes show positive trends. Patient outcome data for cholesterol, weight, body mass index (BMI), waist circumference, and blood pressure can be found in Appendix C. Data comparing the Affinity COURAGE Clinic to the COURAGE Trial are presented in Appendix D.

Patient satisfaction surveys reveal that the participants appreciate the convenient, personalized care received from their team of providers and develop a positive outlook for their future.

### Population Identification

Similar to the COURAGE trial, the COURAGE Clinic is tailored to patients at high risk for cardiovascular disease, including those with known CAD, myocardial infarction, or history of revascularization. Unlike the trial, Affinity has extended eligibility criteria to include patients with CAD equivalents, such as abdominal aortic aneurysms, peripheral arterial disease, carotid artery disease, stroke, and diabetes. Most patients are referred to the program by their primary care provider (PCP) or cardiologist. Currently, no registries are utilized to identify eligible patients.

Demographics (as of March 2011)

Enrolled patients: n=137

Patients reaching 9 months: n=62

Patients reaching 12 months: n=44

Average age: 61.4 years

Age range: 39–81 years

Gender: 73% male

Mean starting low-density lipoprotein-C:  
91 mg/dL

Average weight at enrollment: 231 lb (508 kg)

Patients with CAD: 89%

Patients with metabolic syndrome: 77%

Patients with diabetes: 34%

## The Intervention

The COURAGE Clinic is located in the cardiology department of Affinity Medical Group. The program utilizes multifactorial treatment strategies to manage all risk factors. In order to reduce unwanted variation in care, protocols were developed based on national guidelines (ATPIII, JNC-7, ACC/AHA guidelines) and the COURAGE trial. Protocols have been enhanced to accommodate different experience levels and scope of staff and to broaden Affinity's focus (eg, to include metabolic syndrome, prediabetes). Protocols allow the clinic's RNs to start and titrate routine cardioprotective medications. If circumstances arise that cannot be addressed by the protocol (such as inability to tolerate certain medications), a physician or pharmacist is contacted to help manage the patient's care.

The core team consists of a medical assistant, COURAGE RN, PharmD, RD, EP, physician champions, and program administrators. The COURAGE RN is the patient's primary contact person throughout the year in the program. Focused, personalized lifestyle modification education is introduced by expert RDs and EPs and is reinforced during each follow-up visit with a COURAGE RN.

All patients receive a screening for such common complicating comorbidities as sleep apnea and depression; those with positive screens are referred to the proper medical department as needed. Patients also are thoroughly screened for metabolic syndrome and prediabetes and subsequently educated and treated if positive. In addition to the standard labs (eg, FLP, liver function tests [LFTs]), the clinic conducts advanced lipid (eg, LDL-p, apolipoprotein B [ApoB]) and emerging risk factor testing (eg, lipoprotein(a), high-sensitivity C-reactive protein (hsCRP)). These extra steps address residual risk and enable the team to properly assess the patient's personal risk level.<sup>6</sup>

A PharmD reviews every patient's medication regimen at least once during the program and when medication changes occur. Adherence to therapies and behavioral motivation is addressed at every visit.

COURAGE RNs are able to contact the physician champions (any of three interventional cardiologists, one non-invasive interventional cardiologist, and one lipidologist) or the COURAGE pharmacist if they have any questions or need help with disease management. Weekly meetings with the entire core team of providers allow discussion and troubleshooting of difficult cases. The more routine cases are reviewed through scheduled weekly meetings between the COURAGE RN and one of the supervising cardiologists.

Additionally, at the end of each patient visit, the RN personally contacts the patient's PCP and other specialty providers (eg, nephrologist) to provide them with the plan of care and receive their feedback. This team approach makes this true comprehensive care.

## COURAGE Clinic visits

During the first visit, patients are given information on the format of the program (Appendix A) and are counseled on how the program fully engages the patient and requires them to take responsibility for their health. The PharmD also meets with the patient to discuss core medications and the importance of adherence. A personalized educational curriculum is assigned to each patient and is divided between visits. Homework is distributed at each visit and helps hold the patient accountable. Each patient is assigned a COURAGE RN who has special cardiac training; this RN will manage the patient's care throughout the remaining appointments.

During the second visit the patient meets with the core team members. Schedules of the health care providers are pre-arranged so that the patient can see each provider during 1 extended visit (total visit approximately 2 hours). The COURAGE RN and PharmD compile the recommendations of core team members into 1 goal sheet (Appendix B) for the patient to work on for the next appointment.

At the remaining follow-up visits, the patient meets with the RN and has the option of a second office visit with the RD and/or EP. Patients with metabolic syndrome, prediabetes or diabetes are strongly encouraged to opt for this second office visit. The COURAGE RN helps the patient set new behavioral goals at each visit and a new goal sheet is filled out.

### **Workflow and staffing changes**

The inspiration for this clinic came after observation of the case management delivered at 1 of the COURAGE trial sites, the Mayo Clinic in Rochester, Minnesota. Although the guideline-driven standard of care goal is the same, the significant differences in structure and size of the Mayo system compared to Affinity's led to a need to invent a new model. At the time, the cardiology department utilized RNs to room patients and make routine phone calls. RDs were located in a different city, requiring patients to travel and leading to frequently cancelled visits. Exercise physiology was limited to cardiac rehabilitation and inpatient care. There was no PharmD available to consult directly with patients. To create the COURAGE Clinic, Affinity not only needed to restructure the cardiology department but also build relationships across the entire health care system to create a core team with shared goals and vision. By training the RNs for disease management and adding PharmD, RD, and EP time with patients' same-day in-clinic, a coordinated team was created.

### **Training**

Because the COURAGE Clinic is providing extensive, advanced medical therapy, staff needs proper and ongoing training. One key to success has been choosing staff members who retain a firm foundation in preventive cardiology and have the ability to educate and motivate patients effectively through behavior modification techniques. Additionally, the group has brought in educational speakers, including participants in the original COURAGE trial, to provide training.

### **Information Technology**

Affinity's current EHR has very limited capabilities for tracking and analysis; therefore, the group is in the process of developing a unique software program to store and analyze core measures and metrics. This program will be able to run statistical reports and provide specific outcome data.

### **Leadership Involvement and Support**

The COURAGE Clinic receives administrative support from the cardiology department director and manager. It also has the support of the health system because leadership values 1) personalized care, 2) innovative ideas that lead to improved outcomes, 3) evidence-based medicine, 4) eliminating waste (ie, unneeded revascularizations), and 5) standard work (ie, following protocols).

Persuading the interventional cardiologists to participate was not difficult. Notwithstanding the fact that this prevention strategy works well enough to ultimately lower their interventional volumes, the cardiologists felt that it was simply the right thing to do for patients. Thus, they have become physician champions for the program. The physicians are not reimbursed for their supervision of COURAGE, but time demands are minimal, as all care given by the staff is protocol-based.

## Appendix A: Program Format

### *COURAGE Program Overview*

#### **Visit 1: Orientation**

Orientation lasts approximately 1 hour. Please bring your completed History & Physical Form, worksheets, and all of your medications (including over-the-counter, herbals, and vitamins). Please bring your medications in their original bottles.

- A medical assistant will greet you and get baseline vital signs (weight, blood pressure, pulse, waist measurements, etc). She will also review your History & Physical form.
- During this visit you will meet your personal COURAGE nurse. She will explain your worksheets and help you set goals.
- A Doctor of Pharmacy will review your medications with you.

#### **Visit 2: Team Visit**

(1 month after Orientation visit)

The team visit will last approximately 2.5 hours and will be with the whole “COURAGE Team”. Please bring your completed worksheets and all of your medications (including over-the-counter, herbals, and vitamins). Please bring your medications in their original bottles. Wear comfortable clothes and shoes for the exercise portion.

- Your nurse will obtain your vital signs and review your worksheets.
- You will go to exercise physiology to complete a treadmill exercise. An exercise physiologist will formulate a personal exercise prescription for you.
- A dietitian will review your eating habits with you and help you set nutritional goals.
- A Doctor of Pharmacy will review your labs with you, discuss any changes in your medication regimen, and help you set goals.

Visits 3 through 5 will last approximately 30 minutes and will be with your personal COURAGE nurse. You can see exercise physiology & the dietitian for an additional visit (1) in combination with any of these visits.

#### **Visit 3: Disease Education**

(2 months after your Team visit)

#### **Visit 4: Medication Education**

(3 months after Disease Education visit)

#### **Visit 5: Maintaining**

(3 months after Medication Education visit)

- During visits 3 through 5 you will learn more about your medical condition(s) and the medications you are taking. At each visit, your nurse will also review your labs with you and will help you set new goals.

#### **Visit 6: Graduation**

(3 months after maintaining visit)

- **GRADUATION!!** By visit 6 you will be 1 year into the new you! During this visit we will review your last labs and your progress in the program. We will help you set up any appointments you might need for the future and give you information on how to stick with your new lifestyle!\*

\* There is an option for a 3-month “extension” visit for those patients who need additional guidance.

## Appendix B: Goal Sheet

### Self Contracts For Risk Factor Intervention

#### COURAGE Clinic

Patient Name: \_\_\_\_\_

Date: \_\_\_\_\_

#### Self-Contract Fitness

Currently, each week I exercise: \_\_\_\_\_

Goal for next visit: \_\_\_\_\_

How certain are you that you will complete the above self-contract?

Not at all Confident		Slightly Confident		Fairly Confident		Very Confident				
0	1	2	3	4	5	6	7	8	9	10

#### Self-Contract Nutrition

Behavioral Goals:

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How certain are you that you will complete the above self-contract?

Not at all Confident		Slightly Confident		Fairly Confident		Very Confident				
0	1	2	3	4	5	6	7	8	9	10

#### Self-Contract Body Weight

Currently, I weigh: \_\_\_\_\_

Goal for next visit: \_\_\_\_\_

How certain are you that you will complete the above self-contract?

Not at all Confident		Slightly Confident		Fairly Confident		Very Confident				
0	1	2	3	4	5	6	7	8	9	10

#### Self-Contract Tobacco/Smoking

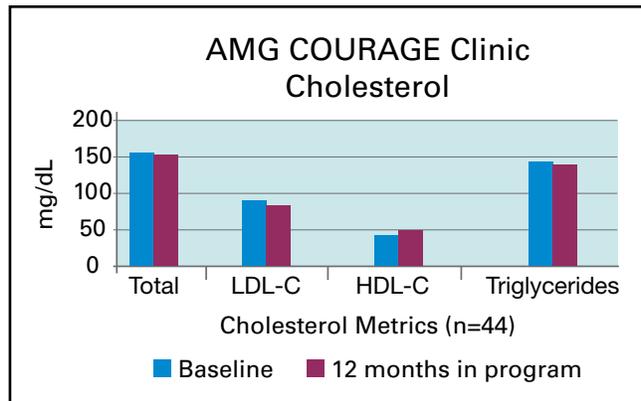
Currently, I smoke/use tobacco: \_\_\_\_\_

Goal for next visit: \_\_\_\_\_

How certain are you that you will complete the above self-contract?

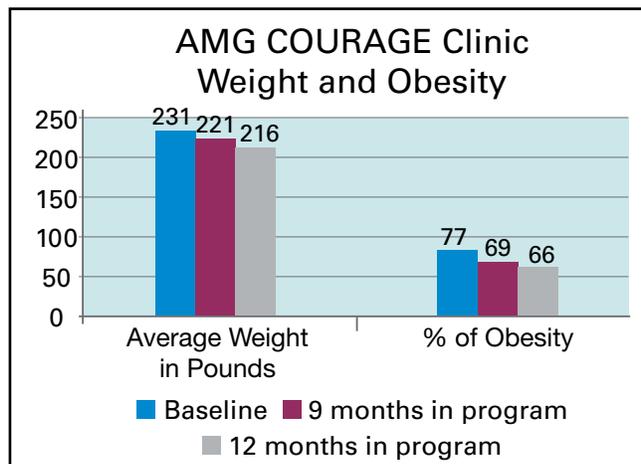
Not at all Confident		Slightly Confident		Fairly Confident		Very Confident				
0	1	2	3	4	5	6	7	8	9	10

## Appendix C: AMG COURAGE Clinic Outcomes



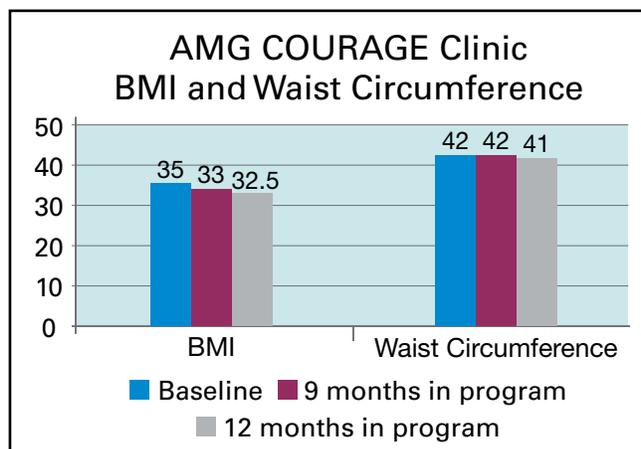
**Figure 1**

Figure 1. Patients who completed 12 months of the program (n=44) showed improvements of 4% in total cholesterol, 14% in LDL-C, 20% in HDL-C, and 4% in triglycerides.



**Figure 2**

Figure 2. Patients achieved an average weight loss of 15 pounds (6.5% improvement). The percentage of obese patients dropped by 11% (14.3% improvement).



**Figure 3**

Figure 3. Patients who completed 12 months in the program lost on average 1 inch around the waist and saw a 7.1% improvement in BMI.

Figure 4. Patients who completed 12 months in the program had a 6% improvement in fasting glucose, a 6% improvement in systolic blood pressure, and a 5% improvement in diastolic blood pressure.

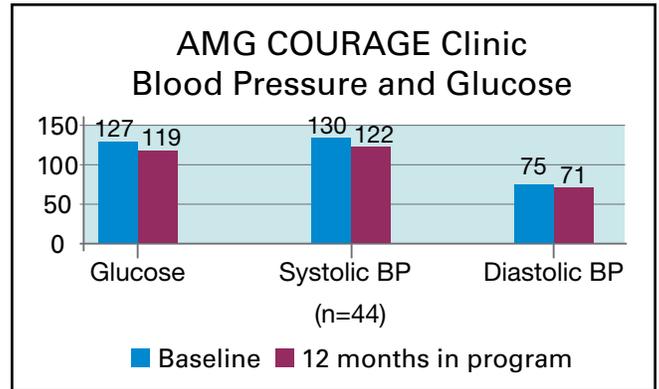


Figure 4

Figure 5. At 12 months, 89% of patients had a LDL-C <100 mg/dL, a 26.2% improvement from baseline. Additionally, at 12 months 75% of the patients were at goal for blood pressure of <130/80, a 50% improvement from baseline.

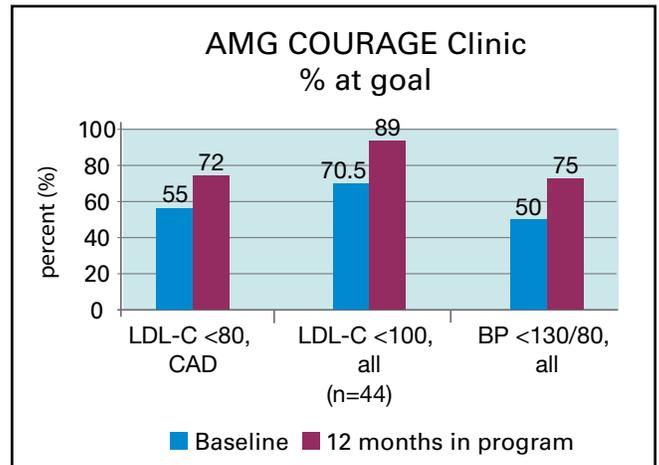


Figure 5

Figure 6. Eighty-five percent of patients completing 9 months of the program (n=62) were at an LDL-C goal of <100, a 30.8% improvement from baseline. At enrollment, only 36% of patients with CAD had a LDL-C of <80; at the 9-month point of the program, this increased to 79% (a 119% improvement).

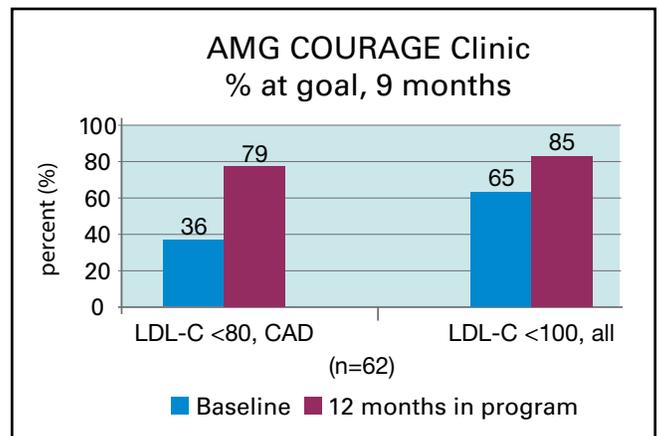


Figure 6

## Appendix D: AMG COURAGE Clinic Comparison with COURAGE Trial

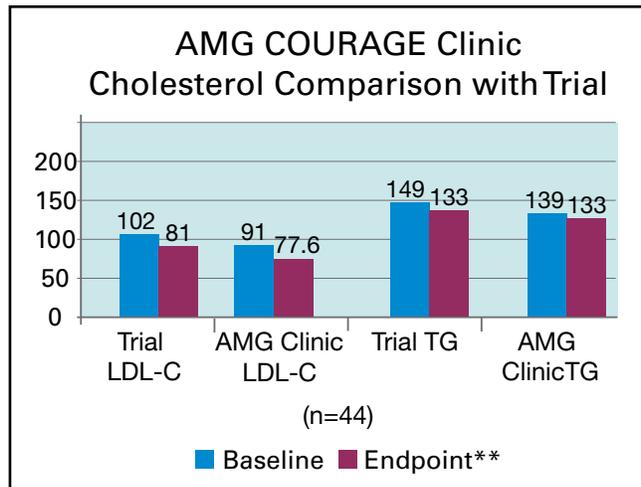


Figure 7

Figure 7. The COURAGE Trial had a 20.6% improvement in LDL-C and 10.7% in triglycerides (TG).<sup>1</sup> The AMG COURAGE Clinic had a 14.7% improvement in LDL-C and a 4.3% improvement in triglycerides. Of note, the trial did have higher baseline levels.

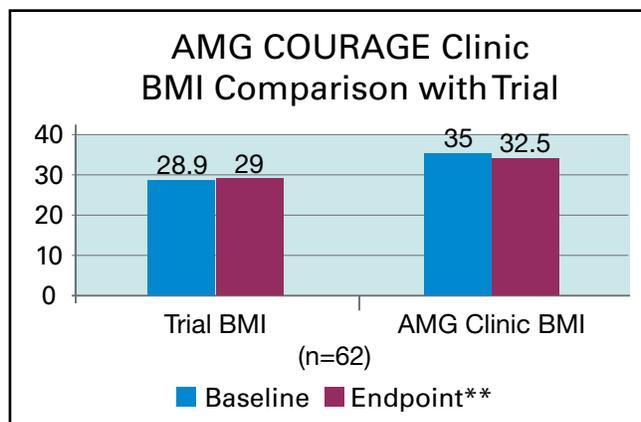


Figure 8

Figure 8. Patients in the COURAGE Trial had a slight increase in BMI,<sup>1</sup> whereas patients in the AMG COURAGE Clinic had a decrease.

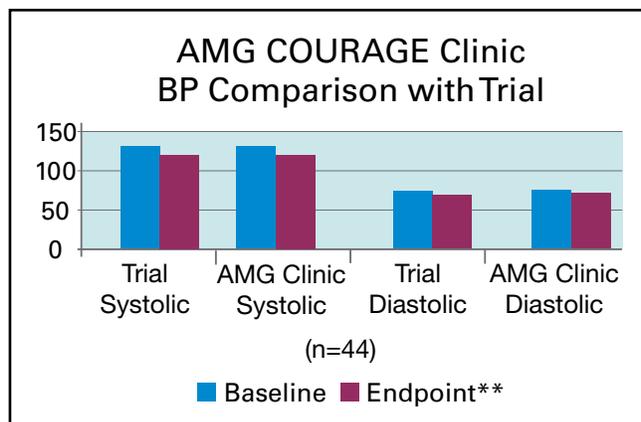


Figure 9

Figure 9. The COURAGE Trial saw a 4.6% improvement in systolic blood pressure and a 5.4% improvement in diastolic blood pressure,<sup>1</sup> whereas the AMG COURAGE Clinic saw an improvement of 6% and 5%, respectively.

\*\*Endpoint for AMG COURAGE Clinic was 12 months. Endpoint for trial was 5 years.

## Lessons Learned

PCPs initially had some concerns regarding dual management of patients. However, their concern dissipated as they recognized that each COURAGE RN contacts the PCP after each visit to provide opportunity to participate in the patient's care and add to the plan of care. Opportunities also are being given to PCPs to assist in protocol reviews and educational sessions.

The program provides extensive disease education to each patient. Because the group found that patients entering the program have a highly variable background of knowledge about heart disease treatment and prevention, Affinity is in the process of developing an introductory class. The class will provide baseline information on heart disease, risk factor control, and medication therapy. COURAGE patients will attend the class prior to coming to their first clinic visit so that the one-on-one visits are spent on more personalized education that builds upon a standard foundation. The class will also be available to the general public to help meet the needs of those who are not eligible or unable to enroll in the COURAGE clinic.

The care in the Affinity COURAGE clinic has achieved optimal medical management standards, with statistical outcomes similar to those of the COURAGE trial. Affinity Health System is now exploring ways to extend this model of care to more patients and eliminate the geographical barrier of being offered solely at 1 site. Incorporation into Medical Home care processes is a potential future step.

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