

A Lifestyle Medicine Clinic in a Community Pharmacy Setting

Thomas L. Lenz, PharmD, MA, PAPHS; Jessica Skradski, PharmD; Maryann Z. Skrabal, PharmD, CDE; Liz Ferguson, MA; and Michael S. Monaghan, PharmD, BCPS
Creighton University, School of Pharmacy and Health Professions, Omaha, Nebraska

ABSTRACT

Chronic diseases continue to be a significant burden to the health care system. Pharmacists have been able to show that drug therapy for patients with chronic diseases can be improved through medication therapy management (MTM) services but have yet to become significantly involved in implementing lifestyle modification programs to further control and prevent chronic conditions. A novel and innovative lifestyle medicine program was started by pharmacists in a community pharmacy in 2008 to more comprehensively prevent and manage chronic conditions. The lifestyle medicine program consists of designing seven personalized programs for patients to address physical activity, nutrition, alcohol consumption, weight control, stress management, sleep success, and tobacco cessation (if needed). The lifestyle medicine program complements existing MTM services for patients with hypertension, dyslipidemia, and/or diabetes. This program is innovative because pharmacists have developed and implemented a method to combine lifestyle medicine with MTM services to not only manage chronic conditions, but prevent the progression of those conditions and others. Several innovative tools have also been developed to enhance the effectiveness of a lifestyle medicine program. This manuscript describes the program's pharmacy setting, pharmacy personnel, participants and program details as well as the tools used to integrate a lifestyle medicine program with MTM services.

Key words

Community pharmacy, lifestyle medicine, prevention, chronic disease, medication therapy management

Disclosures

Thomas L. Lenz, PharmD, MA, PAPHS: Author of the book *Lifestyle Journal* and Editor-in-Chief of Prevention Publishing and receives royalties from Prevention Publishing. The *Lifestyle Journal* is used in the program described in this manuscript. No other conflicts of interest exist for the other authors.

Introduction

Chronic diseases continue to be a significant burden to the citizens of the United States as well as its economy. In 2005, approximately 133 million Americans (45% of adults) had at least one chronic disease and these conditions accounted for 70% of U.S. deaths.¹ The top four causes of death in 2004 were heart disease, cancer, stroke, and chronic respiratory disease, all of which are chronic diseases.² In 2004, \$1.7 trillion dollars was spent on chronic conditions accounting for 75% of the U.S.'s annual health care costs.³

As stated above, heart disease is the leading cause of death in the United States and is a major cause of disability.³ In 2006, coronary heart disease accounted for one out of every six deaths and in 2010 it is estimated that 785,000 Americans will have their first heart attack and 470,000 will have a recurrent heart attack.⁴ As a result, many health care providers are implementing strategies to mitigate the incidence of heart disease and other chronic conditions.²

These strategies include proper drug therapy as well as lifestyle modifications.

Pharmacists have been able to show that drug therapy for patients with chronic conditions can be improved through pharmacist managed medication therapy management (MTM) services. However, pharmacists have yet to become significantly involved in lifestyle modification programs for patients with chronic conditions.⁵ The purpose of this manuscript is to describe the implementation of a novel lifestyle medicine program for patients with chronic conditions. This program is innovative because it is conducted by pharmacists in a community pharmacy practice setting in conjunction with MTM services. In addition, several innovative tools were developed specifically for this program to enhance lifestyle medicine awareness and education in the participants, as well as communication and program adherence.

Background

In 2007, health risk appraisal (HRA) data was obtained from the employees of a medium sized university located in the Midwest portion of the United States. This data revealed that 37% of employees were at risk for coronary heart disease with approximately 65% being overweight or obese, 37% having high blood cholesterol, 16% having high blood pressure and 10% having diabetes. Additional internal data showed that the most common medical claims for the University were related to cardiovascular disease and the most frequently filled prescription medications were used to treat high cholesterol. To reduce the incidence of cardiovascular disease and contain health care costs, the University initiated the pharmacist managed Cardiovascular Risk Reduction Program (CVRRP) for its employees as part of the wellness benefit package. The first participants of this program were enrolled in August 2008.

Pharmacy Setting

The CVRRP takes place at a community pharmacy that is located in the medical center that is associated with the University. This is a community pharmacy operated by the University's School of Pharmacy and Health Professions which serves the local community as well as the University employees. The pharmacy fills approximately 180 prescriptions per day and staffs five pharmacists, four pharmacy technicians and one community pharmacy practice resident. Three private rooms are available in the pharmacy for patient counseling. One of the rooms is used specifically for the CVRRP and is outfitted with lifestyle medicine and chronic disease educational materials, cardiovascular risk assessment tools, a blood pressure monitor, body weight scale and a computer with software to analyze the nutritional value of food consumption. Each of the CVRRP participants has a separate medical chart for documenting progress while in the program, which is also kept in the pharmacy.

Pharmacy Personnel

To date, fifty individuals are enrolled as participants in the CVRRP. These individuals are managed on a regular basis by one of three pharmacists. The pharmacists who take part in the CVRRP have each been given time to meet with the program participants as part of their normal work responsibilities. All three pharmacists are either residency or fellowship trained with one being a Certified Diabetes Educator (CDE) and another being a certified Physical Activity in Public Health Specialist (PAPHS). The amount of time that each pharmacist spends seeing patients for the program can

vary in a given week between two and 15 hours, averaging approximately five hours per week.

The CVRRP also implements the services of a health educator. This individual works for the University, but not specifically for the pharmacy. The CVRRP Health Educator is a master's degree trained individual whose primary responsibility for the CVRRP is to lead the CVRRP Support Group meetings, publish the monthly CVRRP Newsletter, and maintain a CVRRP blog site. The amount of time the CVRRP Health Educator spends on the program averages approximately three hours per week. In addition to the CVRRP pharmacists and Health Educator, a University employed Registered Dietitian is consulted on an "as needed" basis.

CVRRP Participants

Participants are eligible for the CVRRP if they are greater than 18 years of age and have the diagnosis of at least one of the three chronic conditions of hypertension, dyslipidemia, and/or diabetes mellitus. The participants may also have other concomitant chronic conditions. It is a requirement of the program that the participants be employees of the University, obtain their healthcare benefits through the University's benefits plan, and obtain their medications from the community pharmacy located within the medical center.

Program Details

The lifestyle medicine program consists of seven personalized programs: physical activity, nutrition, alcohol consumption, weight control, stress management, sleep success, and tobacco cessation (if needed). The two main tenants of the CVRRP are that (1) the program is patient-centered where each contact with the participant is one-on-one with the pharmacist and, (2) that the participant can continue to be involved in the program for as long as they wish. The participants help develop their individual program goals and have significant input into the development of their lifestyle medicine program. Described below are the program details related to the participant/pharmacist appointments beginning with the initial screening phone call through the follow-up maintenance visits.

Initial Screening

Individuals who are interested in participating in the program initially contact the CVRRP Clinical Director via telephone or email. An eligibility screening is conducted via a phone conversation between the CVRRP Clinical Director and the participant. Screening questions consist of asking the participant's age, gender, diagnosed chronic conditions, medications (including over-the-counter and natural

products), and primary care physician's name. If the participant meets the program eligibility criteria, they are scheduled for a Consent and Baseline Health Data visit.

Visit 1: Consent and Baseline Health Data

The purpose of the first visit with the participant is to gather a complete health history, measure baseline health information (listed below), confirm the participant's medications with that obtained in the Initial Screening, obtain participant consent, obtain the participants complete contact information, confirm the participant's primary care physician's name and contact information, distribute educational information about the participant's specific chronic conditions and behavior change logbooks, discuss short and long-term lifestyle medicine goals, provide an overview of the program, and answer any questions from the participant. The Baseline Health Information form specifically designed to collect lifestyle medicine data for the CVRRP is provided in Appendix A. This visit is scheduled for 60 minutes.

Baseline health information consists of gathering laboratory data, lifestyle habits, health related quality of life, and cardiovascular risk assessments. Specifically, the laboratory data consists of date of birth, cholesterol (total cholesterol, low-density lipoprotein, high-density lipoprotein and triglyceride), blood glucose, blood pressure, heart rate, height, weight, and waist circumference. Cholesterol and blood glucose are measured using the Cholestech LDX (Cholestech Corporation, Hayward, CA).

Baseline lifestyle habit information consists of current eating and exercise habits, weight control history, tobacco and alcohol use, sleeping habits, and stress history. Health related quality of life is measured using the Centers for Disease Control and Prevention (CDC) HRQOL tool (Appendix B).⁶ This is a statistically valid four question survey that has been used by the CDC to measure population health related quality of life since 1993 as part of the Behavioral Risk Factor Surveillance System (BRFSS). Lastly, cardiovascular risk assessments are performed using the Framingham Heart Study, 10 year risk for coronary heart disease and 10 year risk for general cardiovascular disease calculators.^{7,8}

Medication therapy management (MTM) services consist of ongoing medication review of all the participant's medications and not just those related to cardiovascular disease. Each of the participant's prescription, non-prescription and natural products are compared with their diagnosed conditions and evaluated for proper drug, dose and adherence criteria. Additionally, medications are evaluated based on cost effective therapy. If medications can

be switched to a less expensive and therapeutically equivalent alternative, the decision is discussed with the participant and the participant's physician.

Following Visit 1, a summary of the participant's baseline health data is sent to the participant's primary care physician along with a program overview and program contact information. It should be noted that prior to beginning the program, permission to participate is obtained from each participant's primary care physician. The permissions are obtained via telephone, fax, email, letter, or face-to-face conversations.

Also following Visit 1, the pharmacist analyzes the baseline health data and develops an individualized program for each of the seven lifestyle medicine areas (physical activity, nutrition, alcohol consumption, weight control, stress management, sleep success, and tobacco cessation if needed). These programs are developed based on the participant's cardiovascular disease risk, personal goals, previous program experiences, and personal barriers. In addition, the comprehensive MTM review takes place following Visit 1.

Visit 2: Program Intervention Day 1

Program Intervention Day 1 is scheduled approximately one to two weeks after Visit 1. The purpose of this visit is to present and explain the participant's individualized lifestyle medicine program. Considerable time is spent during this visit educating the participant about the specific components of their program. Participants are also taught how to use their lifestyle adherence logbooks (described below). In addition, the results of the MTM service are reviewed with the participant. This visit is scheduled for 60 minutes.

Visits 3 – 12: Follow-up Within First Year

Participants attend regularly scheduled follow-up appointments at different intervals throughout the first year of the program. After Program Intervention Day 1, the participant and pharmacist meet every two weeks up to the first month, then monthly up to the sixth month, then every other month up to the 12th month. This type of scheduling system provides frequent contact with the participant while he/she is initiating the behavior change intervention program. This allows the pharmacist frequent interactions to review the participant's progress and troubleshoot adherence issues. As the participant progresses through time, they meet less frequently with the pharmacist as they gain behavior change independence and successful program adherence. The purpose of the follow-up appointments is to assess the participant's progress, review any medication changes, measure blood pressure and heart rate, and establish a

trusting relationship between the pharmacist and the participant. The follow-up appointments are scheduled for 30 minutes.

Visit 13+: Follow-up Beyond One Year

At the one year mark and annually thereafter, the baseline assessments are repeated to measure the participant's progress in the program and to estimate the program's overall effectiveness relative to the goals of the University. In addition, the participant's goals are reassessed and new goals are created for the next year. Beyond the first year, participants meet with their pharmacist every three months for as long as the participant chooses to remain in the program. These follow-up appointments are scheduled for 30 minutes and consist of assessing the participant's progress, reviewing any medication changes, measuring blood pressure and heart rate, and reassessing goals as needed.

Reimbursement for Pharmacy Services

Currently, the pharmacist's time spent working on the CVRRP is not being reimbursed and is considered service to the University. The benefits of the program to the pharmacist are that it allows them to create, explore, and discover innovative ways for pharmacists to deliver preventive care services in a community pharmacy setting. In addition, the pharmacists have found it to be a very rewarding way to practice pharmacy. Salaries for the pharmacists involved in the program are covered as either a faculty or staff pharmacist position and therefore, obtaining financial reimbursement for the CVRRP services is not a priority at this time.

Program Tools

Several innovative tools have been developed for the CVRRP to improve awareness, education, adherence, and communication. A survey asking the participants which program interventions and tools helped them the most to reach their program goals showed that the patient-centered one-on-one appointments, cardiovascular risk assessments and the *Lifestyle Journal* helped them the most. The *Lifestyle Journal* and other program tools are described below.

Lifestyle Journal

The *Lifestyle Journal* is an innovative logbook that was developed for the CVRRP for the purposes of improving awareness of lifestyle habits and to maximize adherence with the implementation and maintenance of a lifestyle medicine program.⁹ The *Lifestyle Journal* consists of week-by-week pages for the participants to write their health goals and use

on a daily basis as a record keeping log to stay on track while achieving these goals. In addition, the *Lifestyle Journal* contains many educational references for the participants such as proper serving sizes of many common foods, solutions to overcoming physical activity barriers, and solutions to prevent and manage stress. The CVRRP participants are required to use the *Lifestyle Journal* and to bring it to each appointment with their pharmacist. Table 1 lists adherence questions contained in the *Lifestyle Journal*.

Nutrition Diary

The Nutrition Diary is a logbook that the participants carry with themselves throughout each day. Each time the participant eats or drinks they record the specific food or drink, amount consumed and the time of day in the Nutrition Diary. For the first 90 days of the program, participants are required to use the Nutrition Diary. The purpose of the Nutrition Diary is for the participants to become more aware of the type and amount of food they are eating, as well as the time of the day when calorie consumption occurs. In addition, the Nutrition Diary is used to input the participant's dietary intake into a nutrition analysis software program to get a more comprehensive view of the participants eating habits. The Nutrition Diary was designed specifically for the program and is available in two versions, one for participants with diabetes and one for participants without diabetes. The Nutrition Diary for participants with diabetes provides space for them to record their blood glucose measurements throughout the day. Documenting this information gives the participant and the pharmacist information about blood glucose control relative to eating habits and time of day.

Beyond the first 90 days of the program, the participants can continue to use the Nutrition Diary if they choose, but it is not required. The Diary may again be reinitiated in specific participants throughout their program on an "as needed" basis. A copy of the Nutrition Diary for both non-diabetes and diabetes participants is provided in Appendices C and D, respectively.

Pedometer

Each participant receives a pedometer when they are enrolled in the program. The pedometer is used to measure the participant's baseline physical activity level, track on-going physical activity level and program progress, and as a tool to set physical activity goals. Daily step counts are recorded in the participant's *Lifestyle Journal*. Each participant receives a new pedometer on an annual basis.

Home Blood Pressure Monitor

Each participant with the diagnosis of hypertension or diabetes mellitus receives a home blood pressure monitor

when enrolled in the program. The home blood pressure monitor is used to enhance the participant's awareness and education about their own blood pressure readings and the lifestyle factors that can influence those readings as they change their health behaviors over time. Participants are asked to take their blood pressure on a daily basis and record the measurements in their *Lifestyle Journal*.

Medication Co-Pay Incentive

For the first 18 months of each individual's program, the employer will cover the co-pay costs for medications used to treat hypertension, dyslipidemia, and diabetes. The purposes of the medication co-pay incentive are to (1) provide a "significant" incentive for individuals to join the program, (2) ensure participants are taking their medication at a 100% adherence rate, (3) make therapeutically equivalent medication switches to less expensive medications, and (4) make the necessary MTM changes to ensure that each participant is taking the correct medication at the correct dose.

In addition to the co-pay incentive, the pharmacy instituted an innovative "Automatic Refill Program" for the CVRRP. This program automatically refills the participant's medication and delivers it to them at their work place on campus. This service was initiated as an extra step to improve medication adherence. The 18 month window was chosen because it appeared to be a reasonable and cost effective period of time for this incentive.

Exercise Facility Incentive

For the first 18 months of each individual's program, the employer will cover the membership costs to join the fitness centers on the University campus. The purpose of this is to provide a "significant incentive" for individuals to join the program and to eliminate the barrier that some individuals have of access to an exercise facility. Participants are not required to use the on-campus exercise facilities, but rather can exercise at a location that is convenient with their schedules. The 18 month window was chosen because it appeared to be a reasonable and cost effective period of time for this incentive.

CVRRP Newsletter

On a monthly basis, a one-page newsletter is published electronically and sent specifically to the participants of the CVRRP. The purpose of the newsletter is to educate and motivate the participants as well as communicate special employee wellness events. The newsletters contain a section that provides a short summary about a lifestyle medicine

topic, as well as a heart healthy recipe section, a motivational quote, and a link to the CVRRP blog site.

CVRRP Support Group

On a monthly basis, a volunteer support group is coordinated and offered specifically to the CVRRP participants. The purpose of the support group is to have the participants share their program successes and tips with others in the program and to assist and motivate participants as they progress through the program. The CVRRP Health Educator (non-pharmacist) conducts the support group sessions. This is the only occasion in the program where group sessions take place.

CVRRP Blog Sites

Two blog sites were created and maintained specifically for the CVRRP. One blog site is maintained by the CVRRP Health Educator. The purpose of this site is to inform participants about discussions that took place during the support group meetings and/or continue a conversation that took place at the support group meetings. The second blog site is maintained by one of the CVRRP participants. The purpose of this site is to provide the "human side" of a behavior change program so that the participants know they are not alone with their successes and failures. Bloggers can remain anonymous when commenting to either of these sites.

Summary

Since its inception in 2008, pharmacists in the Cardiovascular Risk Reduction Program have been able to implement a successful lifestyle medicine program in a community pharmacy setting. This program is innovative because pharmacists have developed and implemented a method to combine lifestyle medicine with MTM services to not only manage chronic conditions, but prevent the progression of those conditions and others. Additionally, innovative tools have been developed to enhance the program's success. Preliminary data collection indicates that the program is successful at the individual participant level by demonstrating a high degree of program adherence and demonstrating improvements in lifestyle behaviors such as physical activity and fruit and vegetable intake as well as weight control. In addition, many participants are experiencing lowering resting blood pressure readings and more favorable cardiovascular risk screening assessments. The CVRRP continues to be supported by the University as a sustainable employee benefit wellness program and should prove to be a venue for further study developments of innovative pharmacy programs related to lifestyle medicine and disease prevention for years to come.

References

1. Centers for Disease Control and Prevention. Chronic Disease and Health Promotion. Available at: <http://www.cdc.gov/chronicdisease/overview/index.htm>. Accessed on June 15, 2010.
2. Partnership to Fight Chronic Disease. 2009 Almanac of Chronic Disease. The impact of chronic disease on U.S. health and prosperity. A collection of statistics and commentary. Available at: http://www.fightchronicdisease.org/pdfs/2009_PFC_DAlmanac.pdf. Accessed on June 15, 2010.
3. Centers for Disease Control and Prevention. Chronic Disease. The Power to Prevent, the Call to Control: At a Glance 2009. Available at: <http://www.cdc.gov/chronicdisease/resources/publications/AAG/chronic.htm>. Accessed on June 15, 2010.
4. Lloyd-Jones D, Adams RJ, Brown TM, Carnethon M, Dai S, De Simone G, Ferguson TB, Ford E, et al. Heart Disease and Stroke Statistics-2101 Update: a report from the American Heart Association. *Circulation* 2010; 121:e1-e170.
5. Lenz TL, Petersen K, Monaghan MS. Counseling patients about lifestyle modification. *US Pharm.* 2008; 33(1):38-45.
6. Centers for Disease Control and Prevention. Health-Related Quality of Life. Available at: <http://www.cdc.gov/hrqol/>. Accessed on June 15, 2010.
7. National Heart, Lung and Blood Institute, Boston University. Hard Coronary Heart Disease (10 year risk). Available at: <http://www.framinghamheartstudy.org/risk/hrdcoronary.html> Accessed on June 16, 2010.
8. National Heart, Lung and Blood Institute, Boston University. General Cardiovascular Disease (10 year risk). Available at: <http://www.framinghamheartstudy.org/risk/gencardio.html>. Accessed June 16, 2010.
9. Lenz TL. *Lifestyle Journal*. Prevention Publishing. Omaha. 2009.

Table 1: Lifestyle Journal Program Adherence Questions⁹

Daily Tracking Questions
Today I remembered to take my medication(s) (Yes/No)
Today I consciously ate in moderation at least one time (Yes/No)
Today I was able to get extra physical activity (Yes/No)
The total amount of purposeful exercise I did today was (minutes)
The number of steps I took today was (from pedometer)
The amount of sleep I had last night was (hours)
The number of alcoholic drinks I had today was
Today I rate my stress level as
My blood pressure today is (from home blood pressure monitor)

Appendix A: CVRRP Baseline Health Information Data Collection Form

Participant Name: _____

Contact information:

Phone numbers Work: _____ Home: _____ Cell: _____

Email Work: _____ Other: _____

Physician Name: _____

Physician Address/Phone: _____

Baseline Health Information

S:

O: Age (DOB):

Height:

Weight:

BMI:

Waist circumference:

HR:

BP:

Tot Chol:

LDL:

HDL:

Trig:

Blood glucose (fasting):

Framingham Risk Score:

CHD Risk Percentage:

Cardiovascular Risk Assessment Category:

CVD Risk Percentage:

Est. Heart/Vascular Age:

Chronic diseases:

Risk factors for cardiovascular disease:

Caloric intake to maintain current body weight:

Baseline pedometer reading:

Current Lifestyle Habits**EATING HABITS**

Patient description

Daily fruit and vegetable intake

Impressions

Barriers to proper nutrition

PHYSICAL ACTIVITY HABITS

Current activity

Number of minutes/day of purposeful exercise

Barriers to exercise

BODY WEIGHT HISTORY

Body weight Today: _____ 1 year ago: _____ 5 yrs ago: _____ 10 yrs ago: _____

Patient description of previous weight loss attempts

TOBACCO USE

Current use: Yes / No / Never

If Yes: How long: _____; How much: _____

SLEEP

Average number of hours of sleep/night

ALCOHOL INTAKE

Number of times per week drink alcohol

Average number of drinks/occurrence

STRESS

During the past **week**, rate overall stress level:

1 Low stress (feeling calm and in control)

2

3 Moderate stress

4

5 High stress (feeling frantic and out of control)

During the past **month**, rate overall stress level:

1 Low stress (feeling calm and in control)

2

3 Moderate stress

4

5 High stress (feeling frantic and out of control)

TOP 3 PERSONAL LIFESTYLE RELATED GOALS

1.

2.

3.

A: 1.

P: 1.

Appendix B: CVRRP Health Related Quality of Life Questionnaire⁶

Name: _____ Date: _____

Healthy Days Core Module (CDC HRQOL-4)

1. Would you say that in general your health is:

(circle)

- a. Excellent
- b. Very good
- c. Good
- d. Fair
- e. Poor

2. Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?

_____ days

3. Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?

_____ days

4. During the past 30 days, for about how many days did your poor physical and mental health keep you from doing your usual activities, such as self-care, or recreation?

_____ days

