# *HERITAGE PROVIDER NETWORK*

&

# *AFFILIATED MEDICAL GROUPS*

# DISEASE MANAGEMENT PROGRAMS

# 2018

Approval Signature:

____________________________      ____**02/28/2018**_________________

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## Introduction

Heritage Disease Management Programs focuses on a population based process that offers coordinated healthcare interventions for defined populations to reduce healthcare costs and improve the quality of life of members with chronic conditions. These programs provide an assessment, care coordination, and patient education to improve and maintain the health of those members.

The purpose of the Disease Management Program is to assist members in obtaining self-management skills to increase quality of life and decrease unnecessary ED visits and hospitalization for preventable disease exacerbations. The program is designed to assist patients in complying with their physician's treatment plan, which involves several key clinical performance indicators based on national standards.

## Overview of the Program

The structure of these Programs will be the same for all diseases and conditions. All programs have the same base components which will be presented first, then the specifics for each disease/ condition will be presented second. The programs offered at this time are: Diabetes, Congestive Heart Failure, and Chronic Obstructive Pulmonary Disease.

## Goals

The goals of the Disease Management Program are to:

- Ensure members are using their medications properly
- Ensure members understand and monitor symptoms more effectively
- Improve patient self-management
- Improve member education on disease
- Reduce health care costs
- Improve coordination of care
- Improve access to care
- Improve quality of life

## Program Components

### Components of Disease Management Programs include:

- Population identification processes - *Programs designed to target individuals with specific chronic diseases*
- Evidence-based practice guidelines
- Collaborative practice - *Multidisciplinary teams to coordinate care.*
- Risk identification and matching of interventions to need
- Patient self-management education

### Process and outcomes measurement and evaluation include:

- Specific HEDIS measures
- Utilization data – hospitalizations, emergency room visits.
- Complaints and inquiries
- Member satisfaction with the program

## Disease Management Team

### Medical Leadership

Oversight of the Disease Management Programs falls under the leadership of the Medical Director. The Medical Director will ensure that all Federal, State, and Health Plan requirements are met by the programs.

### Primary Care Physicians (PCPs) & Specialists (SCPs)

The Medical Director, and/or the designee, will educate all group-based physicians on the requirements of the Disease Management Programs.

Annually, the Quality Improvement Committee (QIC), will review the current program, relevant policy and procedures, member program educational material, clinical practice guidelines, reports, patient satisfaction surveys, and will make recommendations for program enhancements.

### Pharmacists

Pharmacists are important members of the disease management team. HPN has determined that these Disease Management Programs will be pharmacist led with collaboration with the Medical Director and member's PCP and Specialist (where appropriate). Multiple studies have suggested that pharmacist expertise, when applied to patient care, can improve outcomes and reduce costs. In our state, pharmacists have expanded scope of practice laws which allow the pharmacist to serve as a physician extender. HPN has a large senior aged patient population which affords many opportunities for pharmacist expertise to assist patients who have multiple chronic conditions. Such conditions require more complex medication regimens than ever before. The balance between harm and help with these medications can be a delicate one. Complex medication management services provide evidence based support to our patients and physicians. Through pharmacist endeavors our organization has been able to realize tremendous movement in triple aim goals supporting cost reduction, quality improvement and enhanced patient satisfaction in the process.

As members of the health care team, pharmacists can provide education, as well as screening and medication monitoring services. Pharmacists are involved in disease management programs in numerous ways.

Individual pharmacist involvement will vary according to each practice setting. Pharmacists:

- Assist in the identification of individuals
- Conduct monitoring for specific diseases, for example, diabetes, cholesterol, blood pressure
- Provide patient education
- Glucose monitoring
- Peak flow monitoring
- Assist with medication adherence
- Provide direct patient care
- Evaluate outcomes of programs

By working as a central member of the interdisciplinary team, the pharmacist can provide ongoing, comprehensive assessment of drug therapy and can share the results of that assessment with

patients and other health care professionals. A trained pharmacist can support safe transitions of care by evaluating medication therapies, identifying and managing drug-related problems for the patient, as well as provide advice on a disease and its management.

## Additional Staff Roles

### Quality

- Semiannual reporting to QIC including outcomes and logs
- Responsible for maintaining program materials and updates

### Coordinator or Admin Staff

- Member outreach and scheduling

Each member of the team will have the appropriate education, training and experience necessary to provide the component parts of the Disease Management Programs.

## Program Management

The program's content has been developed using clinically evidenced based guidelines or nationally recognized standards of care. Individualized patient intervention strategies and goals are developed in collaboration with the member, all treating physicians and are consistent with nationally accepted clinical guidelines. In addition, the Pharmacists will ensure the treatment plan supports the Member's preferences for psychosocial, educational, therapeutic and other non-medical services.

The Pharmacists ensures the treatment plan supports providers' clinical treatment goals and builds a treatment plan that reflect personal, family and community strengths. The Pharmacists will review the Member's compliance with the treatment plan, including medication compliance on a routine basis and will document progress to shared goals. At any point that the Pharmacists recognizes that the Member is non-compliant with part or all of the treatment plan, the Pharmacists will:

- Work to identify and understand the members perceived and actual barriers to success.
- Problem solve for alternative solutions with the Member.
- Report non-compliance to the treating provider/specialist, offer potential solutions and integrate provider feedback.
- Facilitate agreement for change between all parties and monitor progress of the change.

The Pharmacists collaborates with the Member's provider on an ongoing basis to ensure integration of physical and behavioral health issues. Co-morbid conditions and other medical and behavioral conditions are considered and are communicated to the members PCP. Collaboration with the members Primary Care Physician may occur to address participant needs beyond participation in the Disease Management Program.

Any updates to these guidelines will initiate a change or modification to the program documentation. If no changes are made to the guidelines, annual review, and approval will be documented within the QIC meeting minutes.

The following is the basic action plan for all disease management program members:

- Health assessments
- Ongoing monitoring of claims and other tools to determine need and risk
- Disease entity education and self-management techniques
- Lifestyle issues and education are addressed including smoking, lack of exercise, obesity, poor nutrition, and abuse of drugs or alcohol.
- Mental health and/or social needs of participants are considered and referral management is conducted where needed
- Influenza and pneumococcus vaccination is administered, as available, to patients between the months of October and February.
- Patient, family, and/or caregiver discussions regarding treatment preferences, living wills, and advance directives will occur as indicated. Hospice consultations may be addressed if the patient meets criteria for Hospice services.
- Patient reminders given to alert patients to testing that should be performed.
- Patient surveys to allow data collection on health status and functional ability.
- Outbound calls made to patients for purposes of health counseling sessions.

## Member Identification

Members will be systematically identified on an ongoing basis to participate in the programs through; claims or encounter data, health assessments, lab data, pharmacy data, emergency room, and urgent care data. Identification of members for the Disease Management Programs is performed monthly.

Members who are identified as potentially having the disease or condition are contacted by phone or during the physician office visit for confirmation and screening. Members may also self-refer by contacting their provider, or designee, directly. Participation in the program is voluntary and there is no additional cost to the member. All members receive education with associated materials about their disease.

## Program Steps

The Disease Management Program will introduce disease management services to members by:

- Introductory letters
- Phone Calls

Introductory information will include information and contact numbers for the specified Disease Management Program as well as verbal and written consent for program participation. Distribution of the Disease Management Program information starts when the member receives the welcome letter that introduces the various components of the program.

This is followed by a disease-specific mailing within 30 days which includes:

- Information about care coordination and condition monitoring, including self-management of their chronic disease.

- Description of services included, and "*how to opt out*" if they do not wish to participate. A member is presumed to be in the program unless they choose to "*opt out.*"
- Explanation of how a member is identified as eligible for our program.
- Information regarding disease exacerbation triggers, goal setting, and lifestyle modifications (i.e. nutrition, exercise and smoking).
- Information on how to work with their practitioner to develop and adhere to an identified treatment plan.
- Information on when to call a physician and/or designee with a focus on behavioral modification, overall assessment of other health conditions as they relate to the identified chronic condition and overall health, goal setting, and problem solving.

## Initial Contact

Administrative personnel will contact the member and set an appointment to perform a health assessment which includes a review of the medication regiment, nutrition, exercise, current health status, co-morbid conditions, and current treatment plan. A plan will be developed with the member regarding call and appointment schedules to encourage member participation in the Disease Management Program. In addition, all members may receive a home visit after an emergency department or inpatient event.

## Coordination of Care

The Pharmacists works in collaboration with the members Primary Care Physician (PCP) to coordinate all care and interventions. PCP or his/her designee is educated by Quality Management staff and provided with the written program, documentation guidelines, educational materials, instructions on how to use the Disease Management Program.

## Services of the Disease Management Program

The Disease Management team includes a multidisciplinary team of providers (for example, Physicians, Pharmacists, Nurses, Dieticians, & Psychologists) to assist individuals in managing their disease or condition. Disease management programs are based on the concept that individuals who are educated about managing their disease or condition seek and receive better care. Individuals with chronic conditions require appropriate management and interventions to ensure optimal health outcomes.

These programs emphasize the prevention of exacerbations and complications using evidence-based practice guidelines and patient empowerment strategies, while evaluating clinical, economic and humanistic outcomes to improve overall health and quality of life for patients. The Disease Management services Include:

1. Chronic condition support: Provides the member with awareness and understanding of the condition, address gaps in care, address lifestyle changes and helps the member overcome barriers related to treatment adherence.
2. Decision support: Assists the member to use decision-making skills through discussion of their current medical information, as related to tests and treatment.

3. **Decision support for symptom support**: Discusses the member's current medical information and makes informed decisions regarding their symptoms.
4. **Information support**: Provides medical information, not directly associated with a decision, to a member.
5. **Prevention support**: Provides support to a member to help prevent complications, exacerbations or development of health problems not associated with a chronic condition. **Provider communication support**: Encourages patients to communicate with their practitioners about their health conditions and treatment.

## Member's Treatment Plan

Once the member has been assessed and the PCP's or SCP's treatment plan is reviewed, Interventions will be identified based on how the members are stratified for the disease/condition indicated, for example: by age, acuity, sex, readiness to change and other risk factors associated with the condition. A plan will be developed to include: the frequency of physician visits, the telephone triage frequency (how often the member will be called), the medication regime, the managing of other co-morbidities and any dietary or exercise restrictions. The goals of the treatment plan is to facilitate interventions, support self-management/self-efficacy, and patient education. Pharmacists interventions are defined to ensure appropriate medical care referrals and assure appointments are kept, immunizations are received, and the Member is connected with available and appropriate community support groups, for example, nutrition programs or caregiver support services.

**When the treatment plan is implemented, our goals are:**

- To assure the Member is leveraging personal, family, and community strengths when able.
- To ensure that we are using evidence-based guidelines and best practices for education and self-management information while integrating interventions to address co-morbidities.
- To modify our approach or services based on the feedback from the Member, family, and other health care team Members.
- To document services and outcomes in a way that can be captured and modified in order to continually improve.
- To communicate effectively with the primary care provider/specialist and other providers involved in the Member's care.
- To monitor Member satisfaction with services, adjusting as needed.

**The member will be informed of the following:**

1. The importance of adhering to the program's treatment plan, to include: adherence to medication, diet, and exercise.
2. How to monitor and report their disease process.
3. Lifestyle issues and what may need to be changed, how to set goals and problem solving techniques. Examples include smoking; poor nutrition; abuse of alcohol or drugs, obesity, etc.
4. Consideration of other health conditions, i.e. Hypertension.
5. How the member can access the services provided.

## Monitoring

Condition monitoring occurs on an ongoing basis and includes; Regular clinical and laboratory assessments, surveillance or pharmacological management, lifestyle management, and assessment of the member's understanding of condition. The pharmacists will analyze the member's medical record and obtain data from the member to evaluate treatment plan efficacy. The pharmacist will work in collaboration with the members PCP to facilitate and coordinate the members care. If clinical gaps are identified for a medication and/or treatment, a telephonic assessment and intervention will be conducted by the Physician and/or designee. The member is educated and is encouraged to seek additional care.

## Education

### Member Education

Educational material will be:

- Integrated into the clinical management system;
- Consistent with best practice recommendations;
- Designed to meet State and/or Federal cultural/linguistic requirements;
- Available in different learning modalities: written pamphlets, telephonic, and discussion;
- Reviewed on an annual basis for appropriateness and accuracy; and,
- Designed to encourage member self-management and monitoring.

Disease education may include one or more of the following elements:

- Definition, causes and pathophysiology of the disease
- Dosage, action and major side effects of medications
- Signs and symptoms of exacerbation and appropriate actions
- Compliance with dietary intake, food selection, portion sizes and timing of meals and snacks
- Activity and exercise tolerance
- Community resources for continuing education and support
- How to report changes in condition to the PCP

### Practitioner/Staff Education

Education for staff interacting with Disease Management Program participants includes the following:

- Instructions on how to use disease management services
- How the organization works with a practitioner's patients in the program
- Disease Process and Management
- Member rights
- Member confidentiality
- Member's right to use complaint/grievance process
- Courteous, respectful participant interactions
- Member involvement in program improvements
- Expressed support for participant/physician relationship

There is a formal orientation and training program for all new staff involved in the program. All existing staff will be assessed by the Medical Director, and/or his designee to ensure proper and consistent execution of the program. Documentation is maintained for all staff orientation, training and assessment activities. The staff member's immediate supervisor will monitor staff interactions to ensure compliance with the above. On an annual basis, staff will receive formal feedback regarding their compliance with the program as per internal policies and procedures.

## Program Efficacy

Participation rates are measured annually. Active participation rates are calculated by measuring the number of members who received at least one interactive contact in an intervention, divided by the number of members eligible for the program. The programs will be measured semiannually as to their effectiveness. Standard outcome metrics are used for each program. Program evaluation will produce a population based qualitative and quantitative result. Benchmarks will be set for each program. Valid data and methodology will be used to determine the outcome measured. Statistical data, from the prior year, will be collected on each member and used as a baseline from which the effectiveness of the Disease Management Program will be evaluated.

Program effectiveness is measured by:

- HEDIS criteria for the condition/disease
- Emergency and inpatient utilization
- Complaints and Inquiries
- Member satisfaction with the program

Based on continuous, objective evaluation by health care professionals, the most effective programs are retained. Marginally effective or ineffective programs are either modified or abandoned.

### Indicators Reported

The indicators that will be reported at the UM/QM Committee meetings are as follows:

*Member Participation*

- Eligible member active participation rates *(Annually)*
    - Opt-in rates - # of identified eligible members/# of identified eligible members that opt into the program by stratification
    - Opt-out rates - # of identified eligible members with at least one interactive contact.

*Utilization Reports*

- Days/1000, data report
- Admits/1000, data report
- Average length of stay, data report
- 30 day readmit rate, data report
- % of members with follow-up within 30 days with PCP or specialist (if clinically indicated), data report

*Member Experience with Disease Management Programs*

- All members enrolled in the DM programs will be surveyed regarding their experience with the program
- All member complaints will be analyzed and any improvements will be implemented in the program

## Continuous Quality Improvement

On an annual basis, any formal changes made to the program as a result of the annual meeting will be made within the program description and distributed to the involved staff. HPN will submit a written description of the Disease Management Program on an annual basis to the QIC. QIC outcomes will be incorporated into clinical and business processes.

## Annual Review

The Heritage Provider Network Disease Management Program will be updated annually and presented to the QIC for review and approval. The update process will include:

- Evaluation of prior year's activities, both subjective and objective
- Clinical outcomes trended
- Member program satisfaction evaluated and tracked
- Description of the New Year's planned activities, including problems to be solved, and measurements of success.

# Diabetes Disease Management Program

Diabetes is a metabolic disease in which the body's inability to produce any or enough insulin causes elevated levels of glucose in the blood. Serious long-term complications include but are not limited to cardiovascular disease, chronic renal failure, retinal damage, and poor wound healing. Wounds that don't heal properly can lead to gangrene and possibly amputation.

Adequate treatment of diabetes, as well as increased emphasis on blood pressure control and lifestyle factors such as not smoking and maintaining a healthy body weight, will improve one's quality of life.

## Scope

There are over 29.1 million Americans (9.3%) of the U.S. population who have diabetes. There are another 8.1 million Americans that are undiagnosed. [1]

- Each year, about 1.9 million people ages 20 or older are diagnosed with diabetes.[1]
- It is estimated that 86 million adults aged 20 and older have pre-diabetes.
- Diabetes is the seventh leading cause of death listed on U.S. death certificates.
- Total health care and related costs for the treatment of diabetes (e.g., hospitalizations, medical care, and treatment supplies) account for about $245 billion.[1]
- Medical costs for people with diabetes are twice as high as for people without diabetes.[1]

### Prevalence of Diabetes by type

- Type 1 (previously called insulin-dependent or juvenile-onset) diabetes accounts for 5 to 10 percent of all diagnosed cases of diabetes.
- Type 2 (previously called non-insulin-dependent or adult-onset) diabetes accounts for 90 to 95 percent of all diagnosed cases of diabetes.

### California Statistics

In California, 13 million adults have pre diabetes or undiagnosed diabetes. About 2.5 million adults have been diagnosed with diabetes. Prediabetes rates are higher among young Latinos (36%), Asian Americans (31%), African Americans (38%), White (7.8%), and Pacific Islander (43%).[2]

## Stratification of Members

Once the members are identified, they are stratified based on glycemic levels by A1C testing. The A1C is a strong predictive value for diabetes complications. For individuals who are meeting treatment targets and have stable glycemic control, they must be tested at least two times a year. For individuals whose therapy has changed or have not met glycemic targets, they must be tested quarterly.

[1] CDC. The National Diabetes Fact Sheet, 2014. http://www.cdc.gov/diabetes/pubs/statsreport14/national-diabetes-report-web.pdf
[2] Susan Babey (2016). Majority of California adults have prediabetes or diabetes. http://newsroom.ucla.edu/releases/majority-of-california-adults-have-prediabetes-or-diabetes

More stringent (<6.5%)

- Short diabetes duration
- Long life expectancy
- Type 2 diabetes treated with lifestyle or metformin only
- No significant CVD/Vascular complications

Less stringent (<8%)

- Severe hypoglycemia history
- Limited life expectancy
- Advanced microvascular or macrovascular complications
- Extensive comorbidities
- Long-term diabetes in whom general A1C targets are difficult to attain

## Clinical Outcome Measures

The clinical outcome measures that will be collected and reported for the Diabetic Program are:

1. HgbA1c Screening – HbA1C Control (<7) and (<8), HgbA1c poor control (>9) – drawn within 90 days from start of program– data collected from HEDIS Report.
2. LDL-c <100 mg/dl, data collected from HEDIS Report.
3. Evidence of yearly foot exam, data collected from HEDIS Report.
4. Evidence of yearly dilated retinal eye exam, data collected from HEDIS Report.
5. Evidence of testing for nephropathy (urine micro albumin), data collected from HEDIS Report.
6. Blood Pressure Control - BP < 130/80 mm/Hg and <140/90 mm/Hg, data collected from HEDIS Report.
7. % received education on disease specific information, data report from Electronic Medical Records.
8. Flu and/or pneumococcus vaccine rate, data report to be obtained from CAHPS report from HEDIS, per respective QIC.
    - Specific HEDIS measures
    - Utilization data – hospitalizations, emergency room visits.
    - Complaints and inquiries
    - Member satisfaction with the program

Optimal Diabetes Care

1. Combination Rate 1: HbA1c Control (<8.0%) and LDL-C (<100 mg/L) and Nephropathy.
2. Combination Rate 2: All criteria in Combination Rate 1 and BP Control (>140/90 mm/Hg) All metric outcomes will be measured by data collected from various reports collected and recorded in Diabetic Registry.

On an annual basis, the following is recorded and reported:

- Member participation rates. The rate is calculated by dividing all members who have received any intervention, by the number of all members who are identified as eligible for the program, regardless of stratification or intervention level of enrollment.
- Annual Diabetes Report, to include:
  - The number of diabetics participating in the CHF management program.
  - Percent of diabetics reporting annual eye exam.
  - Percent of diabetics reporting semiannual A1C measurement.

# Congestive Heart Failure (CHF) Disease Management Program

According to the National Heart Lung and Blood Institute, heart failure is a progressive disorder in which damage to the heart causes weakening of the cardiovascular system. It manifests by fluid congestion or inadequate blood flow to tissues. Heart failure progresses by underlying heart injury or inappropriate responses of the body to heart impairment.

## Scope

About 5.7 million people in the United States have heart failure, and it results in about 610,000 deaths annually.[3] However, treatments, such as pharmacological therapy and lifestyle changes can help people live longer and more active lives.[3]

- In the US, about 610,000 people die of heart disease annually. That is one in every four deaths in the United States.
- Heart disease is the leading cause of death for both men and women.
- Coronary heart disease is the most common type of heart disease.
- Every year about 735,000 Americans have their first heart attack. Of these, 525,000 are a first heart attack and 210,000 happen in people who have already had a heart attack.[3]
- In 2016, heart disease cost the United States $207 billion annually - This total includes the cost of health care services, medications, and lost productivity.

### Mortality

Heart disease is the leading cause of death for people of most ethnicities in the United States. Below is the percentage of all deaths caused by heart disease in 2013, listed by ethnicity.[4]

| Race of Ethnic Group | % of Deaths |
|---|---|
| African Americans | 23.8 |
| American Indians or Alaska Natives | 18.4 |
| Asians or Pacific Islanders | 22.2 |
| Hispanics | 22.7 |
| Whites | 23.8 |
| All | 23.5 |

### Members at Risk

About half of Americans (47%) have at least one of these three risk factors: high blood pressure, high cholesterol, and smoking. These are some of the main factors for heart disease. Several other lifestyle choices and conditions such as overweight, obesity, Diabetes, and physical inactivity can put people at a higher risk for heart disease.[4]

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[3] CDC Heart Disease Facts, 2014. http://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_heart_disease.htm

[4] CDC. Deaths, percent of total deaths, and death rates for the 15 leading causes of death in 10 year age groups, by race and sex. United States, 2013.

Risk Prevention

For people with heart disease, studies have shown that lowering cholesterol and blood pressure levels can reduce the risk of:

- Dying from heart disease.
- Having a nonfatal heart attack.
- Needing heart bypass surgery or angioplasty.
- For people without heart disease, lowering cholesterol and blood pressure levels can reduce the risk for developing heart disease.

## Stratification of Members

Once the members are identified, they are stratified according to risk.
Members are stratified into low, medium, and high risk. These are functional classifications and generally rely on the New York Heart Association Functional Classifications. The classes are (I – IV):

Class I: no limitation is experienced in activities; there are no symptoms from ordinary activities.
Class II: slight, mild limitation of activity; the patient is comfortable at rest or with mild exertion.
Class III: marked limitation of any activity; the patient is comfortable only at rest.
Class IV: any physical activity brings on discomfort and symptoms occur at rest.

According to the American College of Cardiology/American Heart Association working group, there are four stages of heart failure[5]:

Stage A: No objective evidence of cardiovascular disease. No symptoms and no limitation in ordinary physical activity.
Stage B: Objective evidence of minimal cardiovascular disease. Mild symptoms and slight limitation during ordinary activity. Comfortable at rest.
Stage C: Objective evidence of moderately severe cardiovascular disease. Marked limitation in activity due to symptoms, even during less-than-ordinary activity. Comfortable only at rest.
Stage D: Objective evidence of severe cardiovascular disease. Severe limitations. Experiences symptoms even while at rest.

## Clinical Outcome Measures

All metric outcomes will be measured by data collected from various reports collected and recorded in Heart Failure Registry

On an annual basis, the following will be recorded and reported:

- Specific HEDIS measures
- Utilization data – hospitalizations, emergency room visits.
- Complaints and inquiries
- Member satisfaction with the program

[5] American Heart Association, 2016. http://www.heart.org/HEARTORG/Conditions/HeartFailure/AboutHeartFailure/Classes-of-Heart-Failure_UCM_306328_Article.jsp#.V7TuS_krKCg

# Chronic Obstructive Pulmonary Disease (COPD) Management Program

According to the National Heart Lung and Blood Institute, chronic obstructive pulmonary disease (COPD) is a progressive disease that makes it hard to breathe by obstructing airflow to the lungs. COPD is the third leading cause of death in the United States. It is often caused by long term exposures to irritating gases and particle matters such as cigarette smoke, air pollution, or chemical fumes.[6]

There are two main conditions associated with COPD: emphysema and chronic bronchitis. Emphysema is when the air sacs within the lungs are damaged; reducing the amount of gas exchanged.[6] Chronic bronchitis is when the lining of the airways is constantly irritated and inflamed. This causes mucus to form in the airways, making it difficult to breathe.[6]

## Scope

Approximately 12 million Americans in the US are diagnosed with COPD and 120,000 die from it annually.[7] An additional 12 million adults in the US are thought to have undiagnosed COPD. Although COPD can occur in young and older adults, it tends to be more prevalent in older adults. There is currently no cure for COPD, however with proper treatments and lifestyle changes can slow the progress of the disease.

- In 2011, 4.6% of California residents were told by a healthcare professional that they have COPD.
- COPD poses a significant economic burden. In 2010, it was estimated that $32.1 billion was spent in healthcare expenditures and lost productivity due to COPD and asthma.[8]
- More women than men are affected by COPD.

### Morbidity

COPD can cause substantial morbidity and mortality. It is best to recognize it during its early stage to prevent further progression of the disease.[7]

- Adults diagnosed with Chronic Bronchitis in the past year: 8.7 million (3.6%).[7]
- Adults who have been diagnosed with Emphysema: 3.4 million (1.4%).[7]

### Risk Prevention

For individuals who have never had COPD, he or she can take steps to prevent it before it starts. For those who already have COPD, it is important to continue to prevent complications and slow the progress of the disease.

- Never start smoking.
- Quit smoking if the individual is an active smoker.
- Avoid being in areas that have heavy pollution, chemical fumes, and dust.

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[6] CDC. Chronic Obstructive Pulmonary Disease, 2014. http://www.cdc.gov/nchs/fastats/copd.htm
[7] CDC Fact Sheet, 2012. http://www.cdc.gov/copd/maps/docs/pdf/CA_COPDFactSheet.pdf
[7] CDC Fact Sheet, 2012. http://www.cdc.gov/copd/maps/docs/pdf/CA_COPDFactSheet.pdf
[8] Kristin Bruno, 2014. CDC reports annual financial cost of COPD to be $36 billion in the US. http://www.chestnet.org/News/Press-Releases/2014/07/CDC-reports-36-billion-in-annual-financial-cost-of-COPD-in-US

- Talk to their primary doctor on whether or not to get influenza and pneumonia vaccines.

California Statistics
Percentages of California Adults with COPD in 2011.[7]
Total Population =16,914

| Race or Ethnicity | Percentages |
|---|---|
| White | 6.0% |
| Black | 6.1% |
| Hispanic | 2.9% |
| Other | 3.5% |

## Stratification of Members

Once the members are identified, they are stratified according to severity of airflow limitation in COPD (Based on Post Bronchodilator $FEV_1$) combined with an assessment of symptoms based on the COPD Assessment test (CAT) and Modified British Medical Research Council (MMRC). Members are stratified into the following GOLD levels with $FEV_1/FVC<.70$:

GOLD I: Mild — $FEV_1 \geq 80\%$ predicted
GOLD II: Moderate — $50\% \leq FEV_1 < 80\%$ predicted
GOLD III: Severe — $30\% \leq FEV_1 < 50\%$ predicted
GOLD IV: Very Severe — $FEV_1 < 30\%$ predicted

| Patient | Characteristic | Spirometric Classification | Exacerbations per year | CAT | mMRC |
|---|---|---|---|---|---|
| A | LOW RISK (less symptoms) | GOLD 1-2 | ≤1 | <10 | 0.1 |
| B | LOW RISK (More symptoms) | GOLD 1-2 | ≤1 | ≥10 | ≥2 |
| C | HIGH RISK (less symptoms) | GOLD 3-4 | ≥2 | <10 | 0.1 |
| D | HIGH RISK (More symptoms) | GOLD 3-4 | ≥2 | ≥10 | ≥2 |

## Clinical Outcome Measures

All metric outcomes will be measured by data collected from various tests collected and recorded in the COPD Registry. On an annual basis, the following will be recorded and reported:

- Specific HEDIS measures
- Utilization data – hospitalizations, emergency room visits.
- Complaints and inquiries
- Member satisfaction with the program