MSSNY Contract Number: CO24582
Deliverable # 10
Final Report on Sub-Regional Solutions

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2011
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1. **HISTORY AND BACKGROUND**

The DOH OHITT/MSSNY PPSO contract is a result of 2005 legislation directing the Department to “issue grant funding to one or more organizations broadly representative of physicians licensed in this state.” Project funding was directed “to include, but not to be limited to”:

- a) efforts to incentivize electronic health record adoption;
- b) interconnection of physicians through regional collaborations;
- c) efforts to promote personalized health care and consumer choice;
- d) efforts to enhance health care outcomes and health status generally through interoperable public health surveillance systems and streamlined quality monitoring.”

The legislation also called for a final report from the Department that includes among other requirements “the appropriateness of a broader application of the health information technology program to increase the quality and efficiency of health care across the state.”

The Medical Society of the State of New York (MSSNY) was awarded a contract in April 2009. The contract Statement of Work calls for MSSNY, along with representatives from NYS DOH and NYeC, to work with rural and solo and small group physician practices to plan, design, build, and initiate operations for PPSO’s that will focus on the following goals to improve the efficiency and effectiveness of health care consistent with the HIT vision and strategy being employed by NYS DOH and NYeC:

1. Performance reporting capabilities and interoperable HIT capacity connecting patients, clinicians, and payors and leveraging health information exchange among all stakeholders
2. Readily available evidence-based care guidelines
3. Improved access to care
4. Enhanced practice-level quality of care evaluation and reporting of health care outcomes
5. Coordination of care for patients with chronic disease
6. Physician practice change management to leverage technology and delivery models
7. A new business model with payors actively supporting physician participation through an enhanced payment system

One of the overarching goals of the pilot project is to transform participating primary care practices into certified, patient centered medical homes (PCMH), which provide primary care in a coordinated, team-based manner. The coordination of care required within certified PCMHs is thought to be the best way to keep patients with chronic conditions healthy, as well as to
focus on preventing chronic diseases in those that do not yet have them. This focus on prevention of disease development, avoidance of hospital admissions, and discouragement of duplication of care also results in lowered costs.

The pilot project has been underway for approximately one year. During this time, through the dedicated efforts of all involved, significant progress has been achieved. The major activities undertaken include:

- Benchmarking of all practice operating procedures against the NCQA Patient Centered Medical Home (PCMH) certification standards
- Assessment of technology capabilities of each participating practices
- Identification and recruitment of organizations with capabilities or potential to become the Physician Support Organizations (Pods)
- Coordination of payor agreements and expectation setting
- Collaboration with the New York State Department of Health
- Establishment of the Adirondack Health Institute
- Negotiation of the per member per month payment amount
- Definition of common quality measures
- Definition of common performance measures
- Conception of the patient level data flow and access
- Creation of technology linkages to HIXNY, the EHR Data Warehouse, the Payor Data warehouse, AHI, the Pods, and participating practices

The pilot has a five-year window to demonstrate that these changes in the delivery of care will have transformed the delivery of healthcare, improved the satisfaction and retention of primary care providers in the region, improved patient health, and contained costs.

2. DESCRIPTION OF IMPLEMENTED SOLUTIONS

Overview

Like many rural areas of the United States, the Adirondack region faced a healthcare delivery crisis. In the two years prior to the start of this pilot project, almost one-third of all the primary care providers in this region had left. Many cited long hours, low pay, and the lack of adequate resources and support to make a difference in the lives of their patients. The majority of the 200,000+ patients in this region are elderly who survive in a rural, economically depressed environment. Healthcare resources are clustered and significant areas of the region do not have primary care providers. The State of New York, along with other stakeholders, recognized the crises and worked together to develop pilot program. The pilot began in 2010 and will operate through 2014. A multi-disciplinary Governance Council was developed to provide
oversight of the project and monitor expected performance. The Council is chaired by the Medicaid Medical Director of the New York State Department of Health, and other voting members include eight representatives from the participating providers and eight from the payors. Additionally, there are non-voting members representing consumers, legal staff, public health, employers, etc.

The Governance Council established the overall structure and timelines for the development of the pilot project transformation of primary care in this region. To ensure standardization and forward progress, it established timelines for all participating practices to meet specific PCMH criteria. A detailed readiness assessment and practice specific work plan was required by January, 2010. The conclusions reached were then used to drive remediation efforts during the following months, including a requirement that all practices electronically prescribe at a high level by June, 2010 and submit their applications to obtain Level II (or higher) NCQA PCMH certification by February, 2011.

While care delivery is being transformed, the reimbursement mechanisms used by the participating payors is also being revamped. The Governance Council worked with participating payors to established a $7.00 per member per month (pm/pm) “management/coordination” fee to be paid in addition to the usual and customary fees for service. Patients were determined to be “enrolled” with a participating provider if they, or their household members, had completed one qualifying office-based primary care visit within 24 months of the start of the program. The pm/pm fee was established to allow participating practices to build the support services necessary to provide coordinated care.

During the initial discussions, it was determined that several competencies were required that were unlikely to be developed at the practice level. To effectively coordinate, report, measure, and support the efforts of the participating practices, the desire to develop a local, regional entity with a natural geographic reach was outlined. The first step in the process was to establish the Adirondack Health Institute (AHI). AHI is an Article 28 central services facility with 501(c)3 not for profit status. AHI was also instrumental in administering the funding for the development of the quality data and payor data warehouses. These two data repositories are integral to the overall success of the pilot program and coordinating the development of these was an essential task. Additional responsibilities are to coordinate the legal requirements of the pilot program, set standards for use by all participants, contract services, perform community health assessments, establish information technology interoperability, coordinate clinical support services, and provide clinical training programs necessary for this ambitious transformation.
In conjunction with the AHI, geographic regions of collaboration were identified and all participating practices were naturally grouped:

- Northern Adirondack, centered in Plattsburgh
- Tri-Lakes, centered in Saranac Lake
- Lake George, centered in Glens Falls

Within each region, physician practice support organizations, or Pods were also developed. Each Pod is responsible for working with the practices within their area for the following activities:

- Patient identification and payment coordination
- Quality improvement activities
- Chronic disease management
  - PharmD, Social Worker, Disease Management Nurse
- Care coordination /Case management /Disease management
  - Care plan construction and education
- Data warehousing (EMR and Health Plan claims data)
  - Clinical decision support
  - Analytics

In each of these communities, organizations were identified and recruited to assume the role of the Pod; they are 1) Adirondack Medical Center (AMC) in Saranac Lake; 2) Hudson Headwaters Health Network (HHHN) in Queensbury (Glens Falls); and 3) Champlain Valley Physicians Hospital (CVPH) in Plattsburgh.

Ultimately, the role of each Pod is to assist the rural, solo, and small physician practices in the capacity to improve care delivery. The Pods are responsible for planning, designing, and building new quality and performance reporting requirements. These entities also chartered to manage technology interfaces and data transfers; identify and standardize evidence-based guidelines; perform quality care evaluation, reporting, and monitoring; conduct performance reporting training; and provide a mechanism by which participating practices could access fractional portions of needed skill sets such as pharmacists, social workers, and registered nurses.

As illustrated in the organizational chart that follows, the strengths of each “layer” are designed to work in concert to build a strong support system on which the participating practices can rely during this pilot program.
The comprehensive coordination of care and focused care for those with chronic conditions is expected to result in a financial return on investment in year three of the five year project.

**Quality Improvement**
One of the major objectives of this pilot project is the transformation of patient care, and ultimately the health of patients involved. To effect this change, it was determined that all three Pods would focus on the same conditions and utilize the same evidence-based guidelines to improve the care provided to those participating in the program. The guidelines selected are provided:

*Obesity Screening and Management in Pediatric Patients*
This evidence-based treatment plan is based on clinical guidelines from the following:

Obesity is known to occur in up to 18% of children in the United States and is also considered a worldwide epidemic. Obesity in children increases the risk of early onset insulin dependent diabetes, hypertension, non-alcoholic fatty liver and elevated lipid levels in the blood stream. Along with significant psychological and social impact the epidemic of obesity has multiple long term effects in children. Children as young as two years old with a BMI of >95 have an increased risk for adult obesity and the subsequent health problems associated including early morbidity and mortality. Although BMI may identify some “false positive” obese children who have a high muscle mass, those patients should be identified by the PCP and be excluded from the obesity interventions.

By screening in a systematic fashion and intervening in a consistent and community wide manner, childhood obesity may be treated and adult obesity may be prevented. Patients will be diagnosed with obesity and included for treatment in this program after considering the following:

1. Children between 2 and 18 years old will have height, weight and BMI calculated at all preventive care visits. CDC-derived normative percentiles are the preferred method for the diagnosis of the overweight or obese child.
2. Children will be diagnosed as overweight if the BMI is at least in the 85th percentile but < the 95th percentile and obese if the BMI is at least in the 95th percentile for age and sex.
3. Unless the child’s height velocity, assessed in relation to stage of puberty and family background, is attenuated recommend against a routine laboratory evaluation for endocrine causes of obesity.
4. Consider referral to a geneticist for children whose obesity has a syndromic etiology, especially in the presence of neurodevelopmental abnormalities. Parents of children who have inexorably gained weight from early infancy and have risen above the 97th percentile for weight by 3 yr of age be informed of the availability of MC4R genetic testing. However, the test is positive in only 2%–4% of such patients who are above the 97th percentile for weight and currently will not alter treatment.

The goals of treating this population of patients include:

1. Identify and categorize patients at risk and with obesity
2. Decrease the percentage of children entering categories of at risk for obesity, obese, and severely obese.

The standardized treatment plan for all pediatric patients identified with asthma is as follows:
A. Prescribe and support intensive lifestyle (dietary, physical activity, and behavioral) modification to the entire family and to the patient, in an age-appropriate manner, for all overweight and obesity treatments for children and adolescents.

B. Prescribe and support healthy eating habits such as:
   - Avoiding the consumption of calorie-dense, nutrient-poor foods (e.g. sweetened beverages, sports drinks, fruit drinks and juices, most “fast food,” and calorie-dense snacks).
   - Controlling caloric intake through portion control in accordance with the Guidelines of the American Academy of Pediatrics
   - Reducing saturated dietary fat intake for children older than 2 yr of age.
   - Increasing the intake of dietary fiber, fruits, and vegetables.
   - Eating timely, regular meals, particularly breakfast, and avoiding constant “grazing” during the day, especially after school.

C. Prescribe and support 60 min of daily moderate to vigorous physical activity and a decrease in time spent in sedentary activities, such as watching television, playing video games, or using computers for recreation. Screen time should be limited to 1–2 h per day, according to the American Academy of Pediatrics.

D. Educate parents about the need for healthy rearing patterns related to diet and activity. Examples include parental modeling of healthy habits, avoidance of overly strict dieting, setting limits of acceptable behaviors, and avoidance of using food as a reward or punishment and probe for and diagnose unhealthy intrafamily communication patterns and support rearing patterns that seek to enhance the child’s self-esteem.

E. Consider pharmacotherapy (in combination with lifestyle modification) if a formal program of intensive lifestyle modification has failed to limit weight gain or to mollify comorbidities in obese children. Overweight children should not be treated with pharmacotherapeutic agents unless significant, severe comorbidities persist despite intensive lifestyle modification. In these children, a strong family history ofT2DM or cardiovascular risk factors strengthens the case for pharmacotherapy. Pharmacotherapy will only be offered by clinicians who are experienced in the use of anti-obesity agents and are aware of the potential for adverse reactions.

In addition to the treatments followed above, all participating providers will work to prevent the onset of childhood obesity. These include:

A. Encourage breast-feeding for a minimum of 6 months.

B. Promote and participate in efforts to educate children and parents by means of ongoing anticipatory guidance about healthy dietary and activity habits and, further,
that clinicians encourage school systems to provide adequate health education courses promoting healthy eating habits.

C. Promote and participate in efforts to educate the community about healthy dietary and activity habits.

D. Clinicians advocate for regulatory policies designed to decrease the exposure of children and adolescents to the promotion of unhealthy food choices in the community (e.g. by media advertisements targeting children and adolescents).

E. Clinicians advocate that school districts ensure that only nutritionally sound food and drinks are available to children in the school environment, including the school cafeteria and alternative sources of food such as vending machines.

F. Advocate for parental participation in the design of school-based dietary or physical activity programs and that schools educate parents about the rationale for these programs to ensure their understanding and cooperation.

G. Advocate for other community and policymaker plans, programs and incentives.

Participating providers will be aware of and work to overcome social barriers through the following efforts:

1. Advocate for regulatory policies designed to decrease exposure of children and adolescents to the promotion of unhealthy food choices in the community (e.g. by media advertisements targeting children and adolescents.)

2. Clinicians advocate that school districts ensure that only nutritionally sound food and drinks are available to children in the school environment, including the school cafeteria and alternative sources of food such as vending machines.

3. Advocate for parental participation in the design of school-based dietary or physical activity programs and that schools educate parents about the rationale for these programs to ensure their understanding and cooperation.

4. Advocate for other community and policymaker plans, programs, and incentives.

Each participating practice will evaluate and report the following measures:

1. All children starting at 24 months and continuing through 18 years of age will have BMI measurements taken at each preventative visit or at a minimum of once per year.

2. Patients with a BMI at the 85th percentile or higher will be evaluated for overweight/obesity associated co-morbidities (metabolic syndrome) which includes lipid profile, fasting glucose, HbA1c, and blood pressure testing at least once per year.
3. Patients with a BMI at the 85\textsuperscript{th} percentile or higher will have themselves and their families prescribed, in an age appropriate manner, intensive lifestyle (dietary, physical activity, behavioral) modifications.

\textit{Asthma Management in Pediatric Patients}
This evidence-based treatment plan is based on clinical guidelines from the following:

NHLBI Clinical Guidelines Expert Panel Report 3 (EPR3): Guidelines for the Diagnosis and Management of Asthma \url{http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.htm}

Asthma is the most common chronic illness in children. These guidelines were created to ensure national standards of asthma care are applied to pediatric patients in the Adirondack Medical Home Pilot.

Children known to have greater than two courses of systemic steroids in a six month period and children with hospitalizations and emergency department visits caused by asthma exacerbations are at risk for more acute exacerbations as well as impairment of quality of life. The methods of care and recommendations focus on reducing those risk factors.

Each participating practice across all PODs will identify, treat, and standardize care for all children diagnosed with asthma will receive standard treatment plan to ensure optimized care. Patients with asthma will be diagnosed by history and direct assessment. The direct assessment may include tools such as a physical exam, peak flow meter assessment, and pulmonary function tests. Pediatric patients between 5 and 18 years old with a diagnosis of asthma will be identified on an annual basis.

The goals of treating this population of patients include:
1. Reduce hospitalizations caused by acute asthma exacerbations
2. Reduce emergency department visits caused by acute asthma exacerbations
3. Decrease use of systemic steroids in children with asthma

The standardized treatment plan for all pediatric patients identified with asthma is as follows:
Patients who experience symptoms that suggest the diagnosis of asthma will be assessed for the diagnosis.

Patients diagnosed with asthma will:
A. be assessed and monitored for severity using both impairment and risk domains
B. have a spirometry measurement (FEV, FVC, FEV,/FVC) in all patients ≥ 5 years old before and after the patient inhales a SABA
C. be assessed for self-management skills, including medication administration technique
D. be prescribed appropriate pharmacological therapy and peak flow meters based on severity assessment
E. have a seasonal influenza vaccination annually
F. have a quarterly visit with their primary care provider
G. have a written Asthma Management Plan that is developed in conjunction with the patient’s caregiver(s) and ongoing education as needed;
H. have environmental factors and co-morbid conditions assessed and counseling provided to control/reduce exposure; and
I. be monitored at least at 2-6 week intervals until control is achieved
J. have an annual asthma control test once control is achieved

Each participating practice will monitor and report to their respective POD the following measures:

1. The number of emergency department visits of patients with a diagnosis of asthma and a discharge diagnosis of asthma during the measurement period
2. The number of emergency department visits of patients with a diagnosis of asthma and a discharge diagnosis of asthma during the measurement period compared to the previous number (trend)
3. The number of admissions of patients with diagnosis of asthma and a discharge diagnosis of asthma during the measurement period
4. The number of admissions of patients with diagnosis of asthma and a discharge diagnosis of asthma during the measurement period compared to the previous number (trend)
5. The use of appropriate medication in the treatment of asthma, i.e. the percentage of in patients ages 5 - 18 years identified with asthma who received Rx for long term control of asthma (inhaled corticosteroids, cromolyn sodium, nedocromil, leokotriene modifiers, methylxanthines)
6. The number of patients with diagnosis of asthma that received an influenza vaccination annually
7. The number of patients with a diagnosis of chronic asthma that received a quarterly visit with their primary care provider during each twelve month period

Preventive Care in Pediatric Patients
This evidence-based treatment plan is based on clinical guidelines outlined in the MMWR
January 8, 2010 / 58(51&52); 1-4,
http://aapredbook.aappublications.org/resources/IZSchedule0-6yrs.pdf
http://www.health.state.ny.us/publications/2378.pdf
Preventive care guidelines in pediatrics encompass a broad range of healthcare topics. For purposes of this program, focus will be on the following areas:

1. Immunizations
2. Obesity screening
3. Lead and anemia testing

Each participating pediatric patients across all PODs will receive preventive care as recommended by the American Academy of Pediatrics, the ACIP, and the New York State Department of Health.

The standardized treatment plan to ensure pediatric patients receive preventative services includes:

A. Childhood Immunizations—(series must be completed by age 2)
   a. 4 DTaP/DT (none prior to 42 days of age)
   b. 3 IPV (none prior to 42 days of age)
   c. 1 MMR
   d. 3 HIB (none prior to 42 days of age)
   e. 3 hepatitis B
   f. 2 hepatitis A
   g. 1 VZV, or documented chicken pox disease (or positive serology) occurring prior to 2nd birthday
   h. 4 pneumococcal conjugate
   i. 2-3 rotavirus
   j. 2 influenza

B. Obesity:
   a. Children between 2 and 18 will have BMI assessments completed at preventive visits
   b. Children between 16 and 18 will also have a lipid profile and fasting glucose completed annually

C. Lead screening:
   a. Children at age 2 will have had at least one lead screening test, and one anemia screening test

Each Pod will determine the appropriate goal for compliance for their participating practices. However, each practice will monitor and report to their respective POD the following measures:

1. Percentage of pediatric patients 2-18 years old with height and weight measured who have BMI calculated
2. Percentage of pediatric patients 16-18 years old with an annual lipid profile and glucose screening completed
3. Percentage of children who have had at least one lead test by age two
4. Percentage of children receiving recommended immunizations by age two:
   a. 4 DTaP/DT (none prior to 42 days of age)
   b. 3 IPV (none prior to 42 days of age)
   c. 1 MMR
   d. 3 HIB (none prior to 42 days of age)
   e. 3 hepatitis B
   f. 2 hepatitis A
   g. 1 VZV, or documented chicken pox disease (or positive serology) occurring prior to 2nd birthday
   h. 4 pneumococcal conjugate
   i. 2-3 rotavirus
   j. 2 influenza

_Hypertension Management in Adult Patients_

This evidence-based treatment plan is based on clinical guidelines from the following:


High blood pressure (hypertension) is prevalent, results in costly intervention and/or death if not treated and managed; however, high blood pressure is easily detected and usually controllable. About 74.5 million people in the United States age 20 and older have high blood pressure, which translates to roughly one in three adults. Of those people with high blood pressure, 77.6 percent were aware of their condition. Of those aware of their condition, 67.9 percent were under current treatment; 44.1 percent had it under control, and 55.9 percent did not have it controlled. In addition, those with the highest rates of hypertension are more likely to be middle aged or older, less educated, overweight or obese, physically inactive, and to have diabetes.

Each participating practice will identify and report standardized measures for all adults diagnosed with chronic, stable coronary artery disease. When determined appropriate by the treating physician, patients will receive standard treatment plan to ensure optimized care. Patients with hypertension will be diagnosed by history and direct assessment.
For inclusion in the measurement aspect of this guideline the patient must meet all of the following criteria:

1. Patient is age 35 or older;
2. Patient must have had a history of hypertension for at least 12 months; and
3. Patient must have been under the care of the physician or physician group for at least 12 months.

The goals of treating these patients include:

1. **Blood Pressure Control**
   - 75% of patients will have blood pressure < 140/90 mm Hg on their most current reading

2. **Lipid Control**
   - 80% of patients will have a complete lipid profile completed annually
   - At least 50% of patients have an LDL < 100 mg/dl

3. **Lifestyle modification**
   - At least 80% of patients have documentation of weight and BMI and appropriate counseling if BMI > 25 kg/m²
   - At least 80% of patients have documentation of their smoking status and receive cessation advice or treatment if they are a smoker

The standardized treatment plan for all patients with hypertension is as follows:

A. Be seen at least twice a year at the PCP office to monitor and manage symptoms and assess risk factors.
B. Have a blood pressure reading, weight and BMI at every visit.
C. Have a complete lipid profile annually (includes total cholesterol, high-density lipoprotein cholesterol (HDL-C), low-density lipoprotein cholesterol (LDL-C) and triglycerides.)
D. Have an electrocardiogram obtained as part of diagnostic work-up.
E. Have smoking status determined at least annually and receive smoking cessation counseling and intervention were recommended.
F. Receive information/counseling on lifestyle modification such as weight reduction, DASH eating plan, dietary sodium reduction, aerobic physical activity and moderation of alcohol consumption, if appropriate.
G. Be prescribed appropriate medications to treat their hypertension, initial drug choices as follows:
   a. Without Compelling Indications
i. Stage 1 Hypertension (SBP 140-159 or DBP 90-99 mmHg): Thiazide-type diuretics for most. May consider ACEI, ARB, BB, CCB, or combination

ii. Stage 2 Hypertension (SBP ≥ 160 or DBP ≥ 100 mmHg): 2-drug combination for most (usually thiazide-type diuretic and ACEI, ARB, BB or CCB)

b. With Compelling Indications:

Each participating practice will monitor and report to their respective POD the following measures:

1. Blood Pressure Control
   a. Percentage of patients with blood pressure < 140/90 mm Hg

2. Complete lipid profile
   a. Percentage of patients with having an annual complete lipid profile
   b. Percentage of patients with LDL < 100 mg/dl

3. Smoking Status and Cessation Advice
   a. Percentage of patients with documentation of their smoking status and receive cessation advice or treatment if they are a smoker

4. BMI
   a. Percentage of patients with documentation of weight and BMI and appropriate counseling if BMI ≥ 25 kg/m²

**Diabetes Management in Adult Patients**

This evidence-based treatment plan is based on clinical guidelines outlined in “Randomized Trial of a telephone Care-Management Strategy” conducted by David E. Wennberg, M.D., M.P.H., Amy Marr, PhD., Lance Lang, M.D., Stephen O’ Mailley, M. Sc., George Bennett, PhD and “Management of Blood Glucose in Type 2 Diabetes Mellitus” by Cynthia M. Ripsin, MD, MS, MPH; Helen Kang, MD; and Randall J. Urban, MD, University of Texas Medical Branch, Galveston, Texas published in *Am Fam Physician*. 2009 Jan 1;79(1):29-36.

Adult diabetic patients are the focus, so only patients with a diagnosis of Diabetes – 250.xx or Glucose intolerance (fasting glucose above 110) – 290.71 and over the age of 18 will be included. This criteria specifically attempts to identify those patients not yet carrying the diagnosis code 250.xx but who are becoming insulin resistant and thus at risk of developing DM. They will require further testing and clinical evaluation.

The goals of treating these patients include:

1. Reduction in number of hospital admissions related to DM
2. Reduction in number of ER visits related to DM
3. Reduction in number of lower extremity amputations (e.g., toes, foot, lower leg)
4. Reduction in incidence of patients with diabetic retinopathy
5. Reduction in incidence of patients with diabetes related coronary artery disease (e.g., myocardial infarction)
6. Reduction in incidence of patients with diabetes related nephropathy

Patients identified for inclusion will be stratified into the following three categories:

1. Low risk: At least 2 HGBA1C < 8 in the last 12 months
2. Moderate risk: At least one HGBA1C above 8 but less than 9 in the past 12 months.
3. High risk: At least one HGBA1C over 9 the in past 12 months.

Some providers can measure HGBA1C in their office. This information may not be part of formal lab reports and thus, not readily accessible by the POD for stratification. Those providers will have to work with their EMR vendors and the POD to ensure that office based HGBA1C data is readily captured in the patient’s EMR. That will ensures patients are properly stratified.

There should be a mechanism to capture those diabetics who continue to visit an endocrinologist. Specialty visits can certainly count as a medical visit if received and reviewed by the PCP office.

The standardized treatment plan for these patients will include:

A. Patient Outreach
B. Clinical Encounter/Patient Follow Up

A. Patient Outreach

Once patients are identified and stratified by the Pod, that list will be sent to the PCP for verification. From that point on, the PCP should review the list and confirm that all his/her diabetics/glucose intolerant patients are listed and properly stratified. If not, he/she should make the appropriate deletion/additions/corrections and share those with the Pod.

From the corrected list, and using the above stratification criteria, the Pod would provide support in between clinical encounters. Understandably, low risk patient will not get as intense Pod follow-up as higher risk patients. A protocol, outlined on the following page, will specifically describe to Pod personnel the intensity of service to provide each strata of patients. The Pod will function as a bridge to ensure patients remain compliant with prescribed treatments and reinforce basic self-management skills. Most importantly, the Pod might play a pivotal role in ensuring patient comply with daily monitoring and recording of fingersticks. Daily glucose monitoring allow patients to assess their control in real time and aid providers in adjusting therapies at follow-up visits.
A number of studies suggest that regular phone follow-up, perhaps weekly, can improve compliance with glycemic monitoring. Initially, the Pod might focus its resources on the highest risk patients.

At this stage, the Pod functions will include:

- Producing accurate list of names and other demographic information of all diabetic patients in our area;
- Stratifying this list based on criteria set by the Quality Committee;
- Hiring and training qualified staff that will carry out patient intervention; this approach, although proven successful, is labor intensive. It will require certified diabetic educators, RN, dieticians to contact patients on a regular basis.
- Providing all IT and other logistical support necessary for patient outreach;
- Developing and maintaining documentation system to be used by educators;
- Alerting PCP if recurrent hyper or hypoglycemia is detected.

Other uses of the Pod might include:

- Building close relationships with local gyms and negotiating preferential rates for our diabetic patients to encourage them to exercise more regularly;

Protocol:

Low risk patients: Monthly phone call querying degree of compliance with glucose monitoring, diet. Average phone call may only last 5 to 10 minutes. Brief review of need for annual eye exam and flu shot, routine medical visit.

Moderate risk patients: Same as above but phone call will be made twice a month. More attention will be placed on frequency of testing and actual FS values. Inquiries will also to be made about compliance with therapeutic regimen and perceived obstacle to adherence to treatment.

High risk patients: Same as moderate risk patients but phone calls may be weekly and may last much longer. More details to be obtained about perceived obstacle to therapeutic compliance and strategy to be offered to patient to overcome them. Ideally, the educator contacting these patients will have handy medication list and basic labs to set up specific goals to be achieved. Each week, the educator will review progress and if appropriate, set new goals. Educators will remain in close communication with PCP.
• Expanding existing diabetic education in our area to make them more accessible to our diabetics;
• Building a website dedicated to diabetic patients in the North Country. This website would list local resources available to our patients and include links to national and state organizations dedicated to Diabetes.
• Enlisting support from local eateries to provide healthier menus for our patients. Those who do could be featured on the Website.

B. Clinical Encounter/Patient follow-up:

These are grouped together as they complement each other. With each patient contact, the PCP needs to review recent clinical data (i.e. relevant blood work, glycemic journal, consult note) and reinforce basic principle of good diabetic care. Every attempt should be made by the office to ensure the following actions are taken:

1. Provide DM clinical visits at least twice a year at the PCP office to monitor and manage symptoms.
2. Have a comprehensive history and physical exam to include a blood pressure, weight and BMI at every visit;
3. Document annual comprehensive foot exam, annual dilated eye exam; and annual dental referral.
4. Order appropriate labwork including: A1c every 3-6 months; fasting lipid profile/cholesterol, urine microalbumin/creatinine ratio annually and serum creatinine at least annually.
5. Update flu and pneumovax if appropriate.
6. Provide counseling on tobacco use, psychosocial adjustment, sexual functioning, preconception/pregnancy,
7. Review need for aspirin therapy and ACE Inhibitor/ARB therapy, when appropriate.
8. Encourage self-management skills such as physical activity, nutrition, self monitoring blood glucose and self inspection of feet.

Here again the PCP office will need to collaborate with the EMR vendor to determine the best way to capture information not generated at his office (dilated eye exam, dental exam...)

Each participating practice will monitor and report to their respective Pod the following measures:

1. Glycated Hemoglobin (HbA1c) Control
   a. % of patients with a HbA1c value > 9.0%
b. % of patients with a HbA1c value < 8.0 %
c. % of patients with a HbA1c value < 7.0 %

2. Blood Pressure Control
   a. % of patients with blood pressure > 130/80 mm Hg
   b. % of patients with blood pressure < 130/80 mm Hg

3. Eye Examination
   a. % of patients with having an annual retinal screening with documentation of date
      (or an exam 12 months prior to reporting year if exam was done and screening
      was negative for retinopathy.)

4. Smoking Status and Cessation Advice
   a. % of patients with of patients with documentation of their smoking status and
      receive cessation advice or treatment if they are a smoker

5. Lipid Control
   a. % of patients with an LDL > 130 mg/dl
   b. % of patients with an LDL < 100 mg/dl

6. Nephropathy Assessment
   a. % of patients having microalbuminuria testing or positive urinalysis or medical
      attention for nephropathy with documentation of date

7. Foot Exam
   a. % of patients having a foot examination, with shoes and socks removed, with
      documentation of date. Documentation of a podiatry visit within the last year
      counts as it is assumed that the visit included a foot examination, with shoes and
      socks removed.

**Chronic, Stable Coronary Artery Disease (CAD)**

This evidence-based treatment plan is based on clinical guidelines from the following:

American College of Cardiology (ACC)/American Heart Association (AHA)
Physician Consortium for Performance Improvement (The Consortium)
For more information and updates visit The Consortium’s Web site [www.amassn.org/go/quality](http://www.amassn.org/go/quality)

Each participating practice across all Pods will **identify, treat, and standardize care** for all adults diagnosed with coronary artery disease and will deliver standard treatment plans to ensure optimized care. Patients with CAD will be diagnosed by history and direct assessment.

For inclusion in the measurement aspect of this guideline the patient must meet all of the following criteria:

1. Patient is age 35 or older;
2. Patient must have had a history of coronary artery disease for at least 12 months; and the patient must have been under the care of the physician or physician group for at least 12 months.

Chronic stable coronary artery disease (CAD) is the leading cause of mortality in the United States, accounting for almost 1 in 5 deaths. There are approximately one million Americans living with CAD. In the past two decades, the number of short-stay hospital discharges for individuals with CAD increased by almost 18%. The total cost of CAD in the United States is approximately $130 billion.

For individuals with CAD, the risk of another heart attack, stroke, and other serious complication is substantial.

Despite potential risks and established clinical guidelines, recent data suggest that some patients are not being managed optimally for this disease including less than optimal numbers of patients being prescribed beta-blockers and angiotensin-converting enzyme (ACE) inhibitor therapy post hospitalization for acute myocardial infarction (AMI) and failure to provide smoking cessation counseling post hospitalization for AMI

The goals of treating these patients include:

1. Blood Pressure Control: 75% of patients will have blood pressure < 140/90 mm Hg on their most current reading
2. Lipid Control:
   - 80% of patients will have a complete lipid profile completed annually
   - At least 50% of patients have an LDL < 100 mg/dl
3. Use of Aspirin or other Antithrombotic: 80% of patients will be prescribed antiplatelet therapy (patients are excluded from this goal if antiplatelet therapy is contraindicated)
4. Smoking Status and Cessation Advice
   - At least 80% of patients have documentation of their smoking status and receive cessation advice or treatment if they are a smoker

The standardized treatment plan for all patients with coronary artery disease is as follows:

1. Be seen at least twice a year at the PCP office to assess for anginal symptoms and manage symptoms.
2. Have a blood pressure reading, weight and BMI at every visit.
3. Have a complete lipid profile annually (includes total cholesterol, high-density lipoprotein cholesterol (HDL-C), low-density lipoprotein cholesterol (LDL-C) and triglycerides.)
4. Have smoking status determined at least annually and receive smoking cessation counseling and intervention were recommended.
5. Be prescribed aspirin or another antithrombin in the absence of contraindication.
6. Be prescribed drug therapy to lower LDL-cholesterol if their LDL-C ≥ 130 mg/dl simultaneously with therapeutic lifestyle changes and control of non-lipid factors.
7. Be prescribed Beta-blocker therapy if they have had a myocardial infarction in the absence of contraindications.
8. Be prescribed ACE inhibitor therapy if they have also been diagnosed with diabetes and/or left ventricular systolic dysfunction (LVSD).
9. Be screened for diabetes (typically by fasting blood glucose or 2 hour glucose tolerance testing). Screening is considered at 3-year intervals.

Each participating practice will monitor and report to their respective POD the following measures:
1. Blood Pressure Control
2. Percentage of patients with blood pressure < 140/90 mm Hg
3. Complete lipid profile
4. Percentage of patients with having an annual complete lipid profile
5. Percentage of patients with LDL < 100 mg/dl
6. Use of Aspirin or Another Antithrombic
7. Percentage of patients prescribed aspirin or another antithrombic
8. Smoking Status and Cessation Advice
9. Percentage of patients with documentation of their smoking status and receive cessation advice or treatment if they are a smoker

**Quality Measures**

Solely improving clinical measures is not sufficient to obtain the full clinical and financial benefits of this pilot program. Additional benefit must come from cost savings generated from medical home activities and must be evaluated in the following ways:

- Utilization of professional services
- Utilization of services provided by medical facilities
- Utilization of appropriate pharmaceuticals

To appropriately measure these savings, it was determined that clinical outcomes must remain at baseline or higher levels to ensure that savings are not due to the withholding of necessary clinical services.

Selection of the quality measures was a collaborative effort and included all stakeholders. To choose the measures used by all practices the following criteria was used:
• **Importance**
  - Relevance to stakeholders
  - Health importance
  - Applicable to measuring care distribution among various population strata
  - Potential for improvement
  - Susceptibility to influence by health care system

• **Scientific soundness**
  - Clinical
  - Explicitness of evidence
  - Strength of evidence
  - Measurement
  - Reliability
  - Validity
  - Allowance for stratification/case–mix adjustment
  - Comprehensible

• **Feasibility**
  - Explicit specification of numerator and denominator
  - Explicit description of inclusion & exclusion criteria
  - Data availability
  - Accessibility, timeliness, costs

• **Face validity** - An adequate quality indicator must have sound clinical or empirical rationale for its use. It should measure an important aspect of quality that is subject to provider or health care system control.

• **Precision** - An adequate quality indicator should have relatively large variation among providers or areas that is not due to random variation or patient characteristics. This criterion measures the impact of chance on apparent provider or community health system performance.

• **Minimum bias** - The indicator should not be affected by systematic differences in patient case-mix, including disease severity and comorbidity. In cases where such systematic differences exist, an adequate risk adjustment system should be possible using available data.

• **Construct validity** - The indicator should be related to other indicators or measures intended to measure the same or related aspects of quality. For example, improved performance on measures of inpatient care (such as adherence to specific evidence-based treatment guidelines) ought to be associated with reduced patient complication rates.

• **Fosters real quality improvement** - The indicator should be robust to possible provider manipulation of the system. In other words, the indicator should be insulated from
perverse incentives for providers to improve their reported performance by avoiding difficult or complex cases, or by other responses that do not improve quality of care.

- **Application** - The indicator should have been used in the past or have high potential for working well with other indicators. Sometimes looking at groups of indicators together is likely to provide a more complete picture of quality.


Measure selection and implementation was driven by a focus on enhancing the probability of a successful project. Deploying all chosen measures at the start of the project would significantly delay the actual start of the project by greatly adding to its complexity at an early stage. Rather than overburden practices with an overabundance of new processes and complex data reporting responsibilities, criteria that provides meaningful value in measuring care for the targeted diseases but were relatively easy to deploy were chosen to be part of Phase 1 data collection.

During Phase 1, practices will learn to efficiently collect and send data to the data warehouse. At the same time, project managers will study the best practices for the collection and reporting of data. After approximately a year of data collection, the Phase 2 measures will be re-evaluated. After re-evaluation, only those measures that will efficiently fit into the data collection processes will be deployed. It is expected that all Phase 2 measures will be deployed, but we reserve the option to modify based upon the realities of the project.

Additionally, comparative baselines will be constructed to provide evaluation of the effect of the project on both measures and the diseases targeted. At the onset of the Pilot, practices were not designated as medical homes, nor did they possess or apply the health information technology necessary to efficiently collect comparative baseline data. As such a comparative baseline will be developed utilizing a sampling process that leverages effective processes already utilized in the collection of HEDIS measures. A comparative baseline will not be collected for all measures due to the difficulty (i.e., expense, inaccessibility) of a particular measure. This approach only applies to clinical measures. Comparative databases for both utilization and cost measures will be developed initially as the data is already available from existing data collection activities.

Once all practices have achieved medical home status and the health information technology is in place, a comparative baseline database will be constructed that includes all the clinical measures. This baseline database will be used to track trends over time for the physicians,
practices, and pods. Trending of the clinical, utilization, and cost measures will be reported on a regular basis to provide feedback to project participants. The ultimate goal is to improve health and save the $7.00 pm/pm additional reimbursement funded by the participating payors by reducing hospital admissions/readmissions and emergency department visits, and by effectively managing medications.

Performance regarding care provided for the following diseases will be submitted by each participating practice regardless of Pod affiliation:

- **Adult**
  - Diabetes Mellitus
  - Hypertension
  - Coronary Artery Disease

- **Pediatrics**
  - Prevention
  - Obesity
  - Asthma

Comparative baselines will be constructed to provide evaluation of the effect of the project on both measures and the diseases targeted. Comparative databases for both utilization and cost measures will be developed initially as the data is already available from existing data collection activities. This baseline database will be used to track trends over time for the physicians, practices, and pods. Trending of the clinical, utilization, and cost measures will be reported on a regular basis to provide feedback to project participants. Detailed information is provided for each Phase in the remainder of the section.
<table>
<thead>
<tr>
<th>Measure</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hemoglobin A1c (HbA1c) - Percent of patients receiving one or more HbA1c test, measurement period</strong></td>
<td>HbA1c is a recognized and proven measure of average patient blood sugar levels over a period of time, and therefore is used to evaluate the degree a patient’s diabetes mellitus is under control. NCQA uses this measure in evaluating health plans. When combined with the other measures in this table, it helps give an indication of how well a physician is managing diabetic patients. This measure was chosen for the following characteristics:</td>
</tr>
<tr>
<td><strong>Importance</strong> – major DM monitor</td>
<td><strong>Scientific soundness</strong> – Proven quality measure</td>
</tr>
<tr>
<td><strong>Feasibility</strong> – available in EMRs; ease of electronic data exchange</td>
<td><strong>Face validity</strong> – process measure but often used to indicate level of care delivery</td>
</tr>
<tr>
<td><strong>Precision</strong> – high as process measure</td>
<td><strong>Minimum bias</strong> – not affected by case-mix, selection bias</td>
</tr>
<tr>
<td><strong>Construct validity</strong> – precedes HbA1c values</td>
<td><strong>Fosters real quality improvement</strong> – actionable measure</td>
</tr>
<tr>
<td><strong>Application</strong> – used in HEDIS and other measurement efforts</td>
<td><strong>Data Source</strong> - EHR</td>
</tr>
<tr>
<td><strong>Measure Result Source</strong> – QDC</td>
<td><strong>Hemoglobin A1c (HbA1c) - Percent of patients with most recent HbA1c level &gt;9.0%, measurement period</strong></td>
</tr>
<tr>
<td><strong>Importance</strong> – major DM monitor</td>
<td><strong>Scientific soundness</strong> – Proven quality measure</td>
</tr>
<tr>
<td><strong>Feasibility</strong> – available in EMRs; ease of electronic data exchange</td>
<td><strong>Face validity</strong> – clinical outcome measure</td>
</tr>
<tr>
<td><strong>Precision</strong> – highly accepted outcome measure</td>
<td><strong>Minimum bias</strong> – minimally affected by demographic factors</td>
</tr>
<tr>
<td><strong>Construct validity</strong> – tightly tied to other quality measures</td>
<td><strong>Fosters real quality improvement</strong> – actionable measure</td>
</tr>
<tr>
<td><strong>Application</strong> – used in HEDIS and other measurement efforts</td>
<td><strong>Data Source</strong> - EHR</td>
</tr>
<tr>
<td><strong>Measure Result Source</strong> – QDC</td>
<td><strong>Hemoglobin A1c (HbA1c) - Percent of patients with most recent HbA1c level &lt;=8%, measurement period</strong></td>
</tr>
<tr>
<td><strong>Importance</strong> – major DM monitor</td>
<td><strong>Scientific soundness</strong> – Proven quality measure</td>
</tr>
<tr>
<td><strong>Feasibility</strong> – available in EMRs; ease of electronic data exchange</td>
<td><strong>Face validity</strong> – clinical outcome measure</td>
</tr>
<tr>
<td><strong>Precision</strong> – highly accepted outcome measure</td>
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<td><strong>Construct validity</strong> – tightly tied to other quality measures</td>
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<td><strong>Application</strong> – used in HEDIS and other measurement efforts</td>
<td><strong>Data Source</strong> - EHR</td>
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<tr>
<td><strong>Measure Result Source</strong> – QDC</td>
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<tr>
<td>Measure</td>
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</table>
| **Hemoglobin A1c (HbA1c)** - Percent of patients with most recent HbA1c level <=7%, measurement period | In some populations, patients with a HbA1c level below 7% are assumed to have their DM under proper control (See 8% standard elsewhere in this table). This measure was chosen for the following characteristics:  
- **Importance** – major DM monitor  
- **Scientific soundness** – Proven quality measure  
- **Feasibility** – available in EMRs; ease of electronic data exchange  
- **Face validity** – clinical outcome measure  
- **Precision** – highly accepted outcome measure  
- **Minimum bias** – minimally affected by demographic factors  
- **Construct validity** – tightly tied to other quality measures  
- **Fosters real quality improvement** – actionable measure  
- **Application** – used in HEDIS and other measurement efforts |
| **Lipid** – Percentage of patients receiving at least one low-density lipoprotein cholesterol (LDL-C) test, measurement period | LDL-C is a recognized and proven measure of lipid levels that are tied to risk of CAD. As patients with DM are at a higher risk of CAD, use of this respected CAD measure is appropriate as management of CAD should be a part of any overarching management of a patient with DM. This measure was chosen for the following characteristics:  
- **Importance** – major DM and CAD monitor  
- **Scientific soundness** – Proven quality measure for CAD  
- **Feasibility** – available in EMRs; ease of electronic data exchange  
- **Face validity** – process measure but often used to indicate level of care delivery  
- **Precision** – high as process measure  
- **Minimum bias** – not affected by case-mix, selection bias  
- **Construct validity** – precedes LDL-C values  
- **Fosters real quality improvement** – actionable measure  
- **Application** – used in HEDIS and other measurement efforts |
| **Lipid** – Percent of patients with Dx of DM with LDL-C < 100 mg/dl from last test done, over measurement period | LDL-C level under 100 mg/dl is a recognized indicator of lipid levels under control. As patients with DM are at a higher risk of CAD, use of this respected CAD measure is appropriate as management of CAD should be a part of any overarching management of a patient with DM. This measure was chosen for the following characteristics:  
- **Importance** – major DM and CAD monitor  
- **Scientific soundness** – Proven quality measure for CAD  
- **Feasibility** – available in EMRs; ease of electronic data exchange  
- **Face validity** – clinical outcome measure  
- **Precision** – highly accepted outcome measure  
- **Minimum bias** – minimally affected by demographic factors  
- **Construct validity** – tightly tied to other quality measures  
- **Fosters real quality improvement** – actionable measure  
- **Application** – used in HEDIS and other measurement efforts |
<table>
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<tr>
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| Lipid – Percent of patients with DM with LDL-C $\geq$ 130 mg/dl from last test done, over measurement period | LDL-C level over 130 mg/dl is a recognized indicator of lipid levels not under adequate control. As patients with DM are at a higher risk of CAD, use of this respected CAD measure is appropriate as management of CAD should be a part of any overarching management of a patient with DM. This measure was chosen for the following characteristics:  
- Importance – major DM and CAD monitor  
- Scientific soundness – Proven quality measure for CAD  
- Feasibility – available in EMRs; ease of electronic data exchange  
- Face validity – clinical outcome measure  
- Precision – highly accepted outcome measure  
- Minimum bias – minimally affected by demographic factors  
- Construct validity – tightly tied to other quality measures  
- Fosters real quality improvement – actionable measure  
- Application – used in HEDIS and other measurement efforts |
| Measure Result Source – QDC | Data Source - EHR |
| Urine Profile – Percentage of patients receiving at least one nephropathy assessment (microalbumin/creatinine ratio, a 24 hour urine for microalbuminuria, timed urine for or spot urine for microalbuminuria or positive urinalysis for protein) during the measurement period | Due to the impact of elevated blood glucose levels on the kidney through its nephrotoxicity or manifestations as CAD nephropathy should be monitored to allow for appropriate care that can mitigate the insult to the kidney. Test values are not included in this measure due to the added complexity of collecting such a value when weighed against the benefits. This measure was chosen for the following characteristics:  
- Importance – major DM and CAD monitor  
- Scientific soundness – Proven quality measure for DM  
- Feasibility – available in EMRs; ease of electronic data exchange  
- Face validity – process measure but often used to indicate level of care delivery  
- Precision – high as process measure  
- Minimum bias – not affected by case-mix, selection bias  
- Construct validity – screening measure  
- Fosters real quality improvement – actionable measure  
- Application – used in HEDIS and other measurement efforts |
| Measure Result Source – QDC | Data Source - EHR |
| Hypertension Control – Percent of patients with most recent systolic blood pressure <130 mm/Hg AND diastolic blood pressure <80 mm/Hg, measurement period | As DM patients are at a higher risk for CAD, properly controlling blood pressure is an important part of an adequate care plan. Blood pressure with a systolic pressure $<130$ mm/Hg and a diastolic pressure $<80$ mm/Hg is indicative of being under control for care. This measure was chosen for the following characteristics:  
- Importance – major DM and CAD monitor  
- Scientific soundness – Proven quality measure for CAD  
- Feasibility – available in EMRs; ease of electronic data exchange  
- Face validity – clinical outcome measure  
- Precision – highly accepted outcome measure  
- Minimum bias – minimally affected by demographic factors  
- Construct validity – tightly tied to other quality measures  
- Fosters real quality improvement – actionable measure  
- Application – used in HEDIS and other measurement efforts |
| Measure Result Source - QDC | Data Source - EHR |
### Adult – Diabetes Mellitus, Patients 18-75 Years of Age – Phase 1

<table>
<thead>
<tr>
<th>Measure</th>
<th>Rationale</th>
</tr>
</thead>
</table>
| **Hyper tension Control – Percent of patients with most recent systolic blood pressure \( \geq 140 \text{ mm/Hg} \) OR diastolic blood pressure \( \geq 90 \text{ mm/Hg} \), measurement period** | As DM patients are at a higher risk for CAD, properly controlling blood pressure is an important part of an adequate care plan. Blood pressure with a systolic pressure \( <130 \text{ mm/Hg} \) and a diastolic pressure \( <80 \text{ mm/Hg} \) is indicative of being under control for care. This measure was chosen for the following characteristics:  
  - Importance – major DM and CAD monitor  
  - Scientific soundness – Proven quality measure for CAD  
  - Feasibility – available in EMRs; ease of electronic data exchange  
  - Face validity – clinical outcome measure  
  - Precision – highly accepted outcome measure  
  - Minimum bias – minimally affected by demographic factors  
  - Construct validity – tightly tied to other quality measures  
  - Fosters real quality improvement – actionable measure  
  - Application – used in HEDIS and other measurement efforts |
<p>| Measure Result Source - QDC                        |                                                                                                      |
| Data Source - EHR                                  |                                                                                                      |
| <strong>ER Visits - Number of ER visits of patients with Dx of DM and discharge Dx diabetes related during measurement period</strong> | Appropriate care for patients with diabetes mellitus should virtually eliminate the need for these patients to seek care in the ER through the prevention of morbidity associated with hyperglycemia (e.g., diabetic ketoacidosis, severe dehydration). Regular practice/clinic based care should prove less expensive than ER based care. Therefore, tracking of this measure is a good surrogate for cost savings as well as quality. Analysis is compiled from a utilization data warehouse and reported on a physician, practice and regional level. |
| Measure Result Source – TBD                        |                                                                                                      |
| Data Source – Hospital Data (Treo)                 |                                                                                                      |
| <strong>ER Visits (Trend) - Number of ER visits of patients with DX of DM and discharge Dx diabetes related during measurement period and previous period (trend)</strong> | See above (ER Visits). This will trend utilization. |
| Measure Result Source – TBD                        |                                                                                                      |
| Data Source – Hospital Data (Treo)                 |                                                                                                      |
| <strong>Admissions - Number of admissions of patients with DX of DM and discharge Dx diabetes related during measurement period</strong> | Appropriate care for patients with diabetes mellitus should virtually eliminate the need for these patients to require admission solely due to hyperglycemia (e.g., diabetic ketoacidosis). Regular practice/clinic based care should prove less expensive than hospital admissions. Therefore, tracking of this measure is a good surrogate for cost savings as well as quality. Analysis is compiled from a utilization data warehouse and reported on a physician, practice and regional level. |
| Measure Result Source – TBD                        |                                                                                                      |
| Data Source – Hospital Data (Treo)                 |                                                                                                      |</p>
<table>
<thead>
<tr>
<th>Measure</th>
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<tbody>
<tr>
<td><strong>Admissions (Trend)</strong> - Number of admissions of patients with DX of DM and discharge Dx diabetes related during measurement period and previous period (trend)</td>
<td>See above (Admissions). This will trend utilization.</td>
</tr>
<tr>
<td>Measure Result Source – TBD</td>
<td></td>
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<tr>
<td>Data Source – Hospital Data (Treo)</td>
<td></td>
</tr>
<tr>
<td><strong>Cost of Admission</strong> - Median cost of admission of patients with DX of DM and discharge Dx diabetes related during measurement period</td>
<td>Appropriate care for patients with diabetes mellitus should virtually eliminate the need for these patients to require admission solely due to hyperglycemia (e.g., diabetic ketoacidosis). Regular practice/clinic based care should prove less expensive than hospital admissions. Therefore, tracking of this measure is a good measure of cost savings as well as quality. Analysis is compiled from a payor data warehouse and reported on a physician, practice and regional level.</td>
</tr>
<tr>
<td>Measure Result Source – TBD</td>
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<tr>
<td>Data Source – Payor Data</td>
<td></td>
</tr>
<tr>
<td><strong>Cost of Admission (Trend)</strong> - Median cost of admission of patients with DX of DM and discharge Dx diabetes related during measurement period and previous period (trend)</td>
<td>See above (Cost of Admissions). This will trend costs.</td>
</tr>
<tr>
<td>Measure Result Source – TBD</td>
<td></td>
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<tr>
<td>Data Source – Payor Data</td>
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<tr>
<td>Measure</td>
<td>Rationale</td>
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</tr>
</tbody>
</table>
| **Eye Exam** – Percent of patients who received a dilated eye exam or evaluation of retinal photographs by an optometrist or ophthalmologist within the measurement period | Eye exams are an important part of a comprehensive program to manage patients with diabetes mellitus. NCQA uses this measure in evaluating health plans. When combined with the other measures in this table, it helps give an indication of how well a physician is managing diabetic patients. Efficient data collection of this measure requires an electronic process to avoid the high cost of record review. Efficient data collection will only come after the implementation of medical homes in each of the practices and effective implementation and use of EMRs. As other diabetes measures provide a good, initial surrogate for diabetes care, this measure is assigned to a second phase in the project when it can become part of a more robust, efficient data collection process. This measure was chosen for the following characteristics:  
  - **Importance** – major DM monitor  
  - **Scientific soundness** – Proven quality measure  
  - **Feasibility** – available in EMRs; ease of electronic data exchange  
  - **Face validity** – process measure but often used to indicate level of care delivery  
  - **Precision** – high as process measure  
  - **Minimum bias** – not affected by case-mix, selection bias  
  - **Construct validity** – important screening measure due to DM associated morbidity  
  - **Fosters real quality improvement** – actionable measure  
  - **Application** – used in HEDIS and other measurement efforts |
| **Foot Exam** – Percent eligible patients (defined as those without bilateral amputations) receiving at least one foot exam, defined in any manner, measurement period | Foot exams are an important part of a comprehensive program to manage patients with diabetes mellitus. NCQA uses this measure in evaluating health plans. When combined with the other measures in this table, it helps give an indication of how well a physician is managing diabetic patients. Efficient data collection of this measure requires an electronic process to avoid the high cost of record review. Efficient data collection will only come after the implementation of medical homes in each of the practices and effective implementation and use of EMRs. As other diabetes measures provide a good, initial surrogate for diabetes care, this measure is assigned to a second phase in the project when it can become part of a more robust, efficient data collection process. This measure was chosen for the following characteristics:  
  - **Importance** – major DM monitor  
  - **Scientific soundness** – Proven quality measure  
  - **Feasibility** – available in EMRs; ease of electronic data exchange  
  - **Face validity** – process measure but often used to indicate level of care delivery  
  - **Precision** – high as process measure  
  - **Minimum bias** – not affected by case-mix, selection bias  
  - **Construct validity** – important screening measure due to DM associated morbidity  
  - **Fosters real quality improvement** – actionable measure  
  - **Application** – used in HEDIS and other measurement efforts |
<table>
<thead>
<tr>
<th>Measure</th>
<th>Rationale</th>
</tr>
</thead>
</table>
| **Hypertension Control** – Percent of patients with most recent systolic blood pressure <130 mm/Hg AND diastolic blood pressure <80 mm/Hg, measurement period | Blood pressure with a systolic pressure <130 mm/Hg and a diastolic pressure <80 mm/Hg is indicative of being under control for care. This measure was chosen for the following characteristics:  
  - **Importance** – major measurement of care  
  - **Scientific soundness** – Proven quality measure for HTN  
  - **Feasibility** – available in EMRs; ease of electronic data exchange  
  - **Face validity** – clinical outcome measure  
  - **Precision** – highly accepted outcome measure  
  - **Minimum bias** – minimally affected by demographic factors  
  - **Construct validity** – tightly tied to other quality measures  
  - **Fosters real quality improvement** – actionable measure  
  - **Application** – used in HEDIS and other measurement efforts |
| Data Source - EHR | Measure Result Source - QDC |
| **Hyperten** | Blood pressure with a systolic pressure <130 mm/Hg and a diastolic pressure <80 mm/Hg is indicative of being under control for care. This measure was chosen for the following characteristics:  
  - **Importance** – major measurement of care  
  - **Scientific soundness** – Proven quality measure for HTN  
  - **Feasibility** – available in EMRs; ease of electronic data exchange  
  - **Face validity** – clinical outcome measure  
  - **Precision** – highly accepted outcome measure  
  - **Minimum bias** – minimally affected by demographic factors  
  - **Construct validity** – tightly tied to other quality measures  
  - **Fosters real quality improvement** – actionable measure  
  - **Application** – used in HEDIS and other measurement efforts |
<p>| <strong>Hypertension Control</strong> – Percent of patients with most recent systolic blood pressure &gt;= 140 mm/Hg OR diastolic blood pressure &gt;= 90 mm/Hg, measurement period | EHR | Measure Result Source - QDC |
| Data Source - EHR | |</p>
<table>
<thead>
<tr>
<th><strong>Measure</strong></th>
<th><strong>Rationale</strong></th>
</tr>
</thead>
</table>
| **Obesity Treatment** - percentage of patients who have had a diagnosis of hypertension and who had a BMI greater than or equal to 95th percentile who are receiving treatment (dietary and activity counseling/education), measurement period | Obesity is clinically tied to hypertension. Reduction in BMI has a positive impact on hypertension and is considered a treatment modality. When combined with the other measures in this table, it helps give an indication of how well a physician is managing hypertensive patients. Further work is needed to define “receiving treatment.” In addition, efficient data collection of this measure requires an electronic process to avoid the high cost of record review. Efficient data collection will only come after the implementation of medical homes in each of the practices and effective implementation and use of EMRs. As other hypertension measures provide a good, initial surrogate for hypertension, this measure is assigned to a second phase in the project when it can become part of a more robust efficient data collection process. This measure was chosen for the following characteristics:  
- **Importance** – hypertension treatment modality  
- **Scientific soundness** – Proven treatment modality  
- **Feasibility** – available in EMRs; ease of electronic data exchange  
- **Face validity** – process measure but can be used to indicate level of care delivery when combined with other measures  
- **Precision** – high as process measure  
- **Minimum bias** – not affected by case-mix, selection bias  
- **Construct validity** – important treatment measure  
- **Fosters real quality improvement** – actionable measure  
- **Application** – effective treatment modality |
| **Obesity Treatment** - percentage of patients who have had a diagnosis of hypertension and who had a BMI greater than 85th percentile but less than the 95th percentile who are receiving treatment (dietary and activity counseling/education), measurement period | Obesity is clinically tied to hypertension. Reduction in BMI has a positive impact on hypertension and is considered a treatment modality. When combined with the other measures in this table, it helps give an indication of how well a physician is managing hypertensive patients. Further work is needed to define “receiving treatment.” In addition, efficient data collection of this measure requires an electronic process to avoid the high cost of record review. Efficient data collection will only come after the implementation of medical homes in each of the practices and effective implementation and use of EMRs. As other hypertension measures provide a good, initial surrogate for hypertension, this measure is assigned to a second phase in the project when it can become part of a more robust efficient data collection process. The measure is similar to the other BMI measure in this table and was added to provide an additional reporting option. This measure was chosen for the following characteristics:  
- **Importance** – hypertension treatment modality  
- **Scientific soundness** – Proven treatment modality  
- **Feasibility** – available in EMRs; ease of electronic data exchange  
- **Face validity** – process measure but can be used to indicate level of care delivery when combined with other measures  
- **Precision** – high as process measure  
- **Minimum bias** – not affected by case-mix, selection bias  
- **Construct validity** – important treatment measure  
- **Fosters real quality improvement** – actionable measure  
- **Application** – effective treatment modality |
<table>
<thead>
<tr>
<th>Measure</th>
<th>Rationale</th>
</tr>
</thead>
</table>
| **Lipid** – Percentage of patients with a Dx of CAD and receiving at least one low-density lipoprotein cholesterol (LDL-C) test, measurement period | LDL-C is a recognized and proven measure of lipid levels that are tied to risk of CAD. As patients with DM are at a higher risk of CAD, use of this respected CAD measure is appropriate as management of CAD should be a part of any overarching management of a patient with DM. This measure was chosen for the following characteristics:  
  - **Importance** – major DM and CAD monitor  
  - **Scientific soundness** – Proven quality measure for CAD  
  - **Feasibility** – available in EMRs; ease of electronic data exchange  
  - **Face validity** – process measure but often used to indicate level of care delivery  
  - **Precision** – high as process measure  
  - **Minimum bias** – not affected by case-mix, selection bias  
  - **Construct validity** – precedes LDL-C values  
  - **Fosters real quality improvement** – actionable measure  
  - **Application** – used in HEDIS and other measurement efforts |
| Measure Result Source - QDC | Data Source - EHR |
| **Lipid** – Percent of patients with Dx of CAD with LDL-C < 100 mg/dl from last test done, over measurement period | LDL-C level under 100 mg/dl is a recognized indicator of lipid levels under control. As patients with DM are at a higher risk of CAD, use of this respected CAD measure is appropriate as management of CAD should be a part of any overarching management of a patient with DM. This measure was chosen for the following characteristics:  
  - **Importance** – major DM and CAD monitor  
  - **Scientific soundness** – Proven quality measure for CAD  
  - **Feasibility** – available in EMRs; ease of electronic data exchange  
  - **Face validity** – clinical outcome measure  
  - **Precision** – highly accepted outcome measure  
  - **Minimum bias** – minimally affected by demographic factors  
  - **Construct validity** – tightly tied to other quality measures  
  - **Fosters real quality improvement** – actionable measure  
  - **Application** – used in HEDIS and other measurement efforts |
| Measure Result Source - QDC | Data Source - EHR |
| **Hypertension Control** – Percent of patients with most recent systolic blood pressure <130 mm/Hg AND diastolic blood pressure <80 mm/Hg, measurement period | Blood pressure with a systolic pressure <130 mm/Hg and a diastolic pressure <80 mm/Hg is indicative of being under control for care. This measure was chosen for the following characteristics:  
  - **Importance** – major measurement of care  
  - **Scientific soundness** – Proven quality measure for HTN  
  - **Feasibility** – available in EMRs; ease of electronic data exchange  
  - **Face validity** – clinical outcome measure  
  - **Precision** – highly accepted outcome measure  
  - **Minimum bias** – minimally affected by demographic factors  
  - **Construct validity** – tightly tied to other quality measures  
  - **Fosters real quality improvement** – actionable measure  
  - **Application** – used in HEDIS and other measurement efforts |
| Measure Result Source - QDC | Data Source - EHR |
| **Hypertension Control** – percentage of patients who had a diagnosis of CAD with most recent systolic blood pressure >= 140 mm/Hg OR diastolic blood pressure >= 90 mm/Hg, current | Blood pressure with a systolic pressure <130 mm/Hg and a diastolic pressure <80 mm/Hg is indicative of being under control for care. This measure was chosen for the following characteristics:  
  - **Importance** – major measurement of care  
  - **Scientific soundness** – Proven quality measure for HTN  
  - **Feasibility** – available in EMRs; ease of electronic data exchange  
  - **Face validity** – clinical outcome measure  
  - **Precision** – highly accepted outcome measure  
  - **Minimum bias** – minimally affected by demographic factors |
<p>| Measure Result Source - QDC | Data Source - EHR |</p>
<table>
<thead>
<tr>
<th>Measure</th>
<th>Rationale</th>
</tr>
</thead>
</table>
| **Obesity Treatment** - percentage of patients with a Dx of CAD who had a BMI greater than or equal to the 95th percentile who are receiving treatment (dietary and activity counseling/education) | Obesity is clinically tied to CAD. Reduction in BMI has a positive impact on CAD (e.g., hypertension) and is considered a treatment modality. When combined with the other measures in this table, it helps give an indication of how well a physician is managing CAD patients. Further work is needed to define “receiving treatment.” In addition, efficient data collection of this measure requires an electronic process to avoid the high cost of record review. Efficient data collection will only come after the implementation of medical homes in each of the practices and effective implementation and use of EMRs. As other CAD measures provide a good, initial surrogate for hypertension, this measure is assigned to a second phase in the project when it can become part of a more robust efficient data collection process. This measure was chosen for the following characteristics:  
  - **Importance** – CAD treatment modality  
  - **Scientific soundness** – Proven treatment modality  
  - **Feasibility** – available in EMRs; ease of electronic data exchange  
  - **Face validity** – process measure but can be used to indicate level of care delivery when combined with other measures  
  - **Precision** – high as process measure  
  - **Minimum bias** – not affected by case-mix, selection bias  
  - **Construct validity** – important treatment measure  
  - **Fosters real quality improvement** – actionable measure  
  - **Application** – effective treatment modality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

<table>
<thead>
<tr>
<th>Measure</th>
<th>Rationale</th>
</tr>
</thead>
</table>
| **Obesity Treatment** - percentage of patients with a Dx of CAD who had a BMI greater than 85th percentile but less than the 95th percentile who are receiving treatment (dietary and activity counseling/education) | Obesity is clinically tied to CAD. Reduction in BMI has a positive impact on CAD (e.g., hypertension) and is considered a treatment modality. When combined with the other measures in this table, it helps give an indication of how well a physician is managing CAD patients. Further work is needed to define “receiving treatment.” In addition, efficient data collection of this measure requires an electronic process to avoid the high cost of record review. Efficient data collection will only come after the implementation of medical homes in each of the practices and effective implementation and use of EMRs. As other CAD measures provide a good, initial surrogate for hypertension, this measure is assigned to a second phase in the project when it can become part of a more robust efficient data collection process. The measure is similar to the other BMI measure in this table and was added to provide an additional reporting option. This measure was chosen for the following characteristics:  
  - **Importance** – CAD treatment modality  
  - **Scientific soundness** – Proven treatment modality  
  - **Feasibility** – available in EMRs; ease of electronic data exchange  
  - **Face validity** – process measure but can be used to indicate level of care delivery when combined with other measures  
  - **Precision** – high as process measure  
  - **Minimum bias** – not affected by case-mix, selection bias  
  - **Construct validity** – important treatment measure  
  - **Fosters real quality improvement** – actionable measure  
  - **Application** – effective treatment modality |
### Pediatrics – Prevention – Phase 1

<table>
<thead>
<tr>
<th>Measure</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lead Screening</strong> - Percentage of patients with at least one blood lead screening test at 24 months of age</td>
<td>Lead screening of children by the second birthday is a major public health initiative of the NYS Department of Health (<a href="http://www.health.state.ny.us/publications/2378.pdf">http://www.health.state.ny.us/publications/2378.pdf</a>).</td>
</tr>
<tr>
<td><strong>Obesity</strong> - Percentage of children over 2 years of age and less than 18 years of age who have had at least one (1) height and weight taken upon visit with BMI calculated during measurement period</td>
<td>Obesity screening is consistent with AAP preventive guidelines (<a href="http://aapredbook.aappublications.org/resources/IZSchedule0-6yrs.pdf">http://aapredbook.aappublications.org/resources/IZSchedule0-6yrs.pdf</a>).</td>
</tr>
</tbody>
</table>

### Pediatrics – Prevention – Phase 2

<table>
<thead>
<tr>
<th>Measure</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Immunizations</strong> - Percentage of patients with complete childhood immunization status by age 2 - four DtaP/DT, three IPV, 1 MMR, 3 H influenza, type B, 1 chicken pox (VZV), 4 pneumococcal conugate,</td>
<td>Immunizations are a widely recognized prevention measure. Collection of accurate immunization records is difficult due to the lack of medical record interoperability among immunization point of care sites. Accurate data collection requires a well-run immunization registry. The implementation of medical homes in practices will assist in improving the accuracy of records. Therefore, this measure is being implemented in Phase II to allow for the establishment of medical homes in practices and improvement on interoperability. It is recognized that implementation of these steps does not correct errors due to their absence in the past, it is expected that records will become more accurate over time and therefore should be considered as a quality measure.</td>
</tr>
<tr>
<td><strong>Application</strong> – CDC (ACIP) measure; legal requirement</td>
<td><strong>Importance</strong> – major preventive care measure</td>
</tr>
<tr>
<td><strong>Scientific soundness</strong> – Proven quality measure for pediatric prevention</td>
<td></td>
</tr>
<tr>
<td><strong>Feasibility</strong> – available in EMRs; ease of electronic data exchange</td>
<td></td>
</tr>
<tr>
<td><strong>Face validity</strong> – outcome measure</td>
<td></td>
</tr>
<tr>
<td><strong>Precision</strong> – high as outcome measure</td>
<td></td>
</tr>
<tr>
<td><strong>Minimum bias</strong> – not affected by case-mix, selection bias</td>
<td></td>
</tr>
<tr>
<td><strong>Construct validity</strong> – recognized measure</td>
<td></td>
</tr>
<tr>
<td><strong>Fosters real quality improvement</strong> – actionable measure</td>
<td></td>
</tr>
<tr>
<td><strong>Application</strong> – NYS DOH measure</td>
<td></td>
</tr>
</tbody>
</table>
# Pediatrics – Obesity – Phase 1

<table>
<thead>
<tr>
<th>Measure</th>
<th>Rationale</th>
</tr>
</thead>
</table>
| **Obesity Screening** - percentage of patients who had height and weight taken upon visit with BMI calculated during yearly measurement period | Obesity screening is consistent with AAP preventive guidelines ([http://aapredbook.aappublications.org/resources/I2Schedule0-6yrs.pdf](http://aapredbook.aappublications.org/resources/I2Schedule0-6yrs.pdf)).  
  - **Importance** – major preventive care measure  
  - **Scientific soundness** – Proven quality measure for pediatric prevention  
  - **Feasibility** – available in EMRs; ease of electronic data exchange  
  - **Face validity** – process measure  
  - **Precision** – highly accepted process measure  
  - **Minimum bias** – minimally affected by demographic factors  
  - **Construct validity** – recognized measure  
  - **Fosters real quality improvement** – actionable measure  
  - **Application** – used to identify patients requiring obesity counseling |

Measure Result Source – QDC  
Data Source - EHR

| **Obesity Treatment** - percentage of patients receiving medical evaluation if BMI greater than or equal to 85th percentile; Testing - blood pressure measurement, HbA1c, lipid profile, fasting glucose. | Obesity treatment evaluation is based upon obtaining basic laboratory values to identify early-stage clinical problems. The actual treatment of childhood obesity is multidimensional and difficult to measure using simple methods. Therefore, focus is on simple screening tests that indirectly indicate a focus by the physician on health problems that are associated with the disease.  
  - **Scientific soundness** – Proven quality measure for pediatric prevention  
  - **Feasibility** – available in EMRs; ease of electronic data exchange  
  - **Face validity** – process measure  
  - **Precision** – highly accepted process measure  
  - **Minimum bias** – minimally affected by demographic factors  
  - **Construct validity** – recognized measure  
  - **Fosters real quality improvement** – actionable measure  
  - **Application** – used to identify patients requiring obesity counseling and closer medical supervision |

Measure Result Source – QDC  
Data Source - EHR

# Pediatrics – Obesity – Phase 2

<table>
<thead>
<tr>
<th>Measure</th>
<th>Rationale</th>
</tr>
</thead>
</table>
| **Obesity Treatment** - percentage of patients who had a BMI greater than or equal to 85th percentile who, with their families, are receiving diet counseling and activity counseling/education | The actual treatment of childhood obesity is multidimensional and difficult to measure using simple methods. Obesity treatment includes counseling, education and other activities that are not easily captured in an EMR. Therefore, this measure will be evaluated for inclusion in a Phase II revision of measures.  
  - **Scientific soundness** – Proven treatment modality  
  - **Feasibility** – available in EMRs after some modification; ease of electronic data exchange  
  - **Face validity** – process measure  
  - **Precision** – accepted process measure  
  - **Minimum bias** – minimally affected by demographic factors  
  - **Construct validity** – recognized measure  
  - **Fosters real quality improvement** – actionable measure  
  - **Application** – treatment modality |

Measure Result Source – TBD  
Data Source - TBD
### Pediatrics – Asthma – Phase 1

<table>
<thead>
<tr>
<th>Measure</th>
<th>Rationale</th>
</tr>
</thead>
</table>
| Appropriate Medications - Percentage of patients ages 5 - 18 years who have asthma who are on appropriate medication (inhaled corticosteroids or Singulair) | Appropriate care for patients with asthma should virtually eliminate the need for these patients to seek care in the ER through the prevention of morbidity associated with disease (e.g., Status asthmaticus). Regular practice/clinic based care should prove less expensive than ER based care. Therefore, tracking of this measure is a good surrogate for cost savings as well as quality. Analysis is compiled from a utilization data warehouse and reported on a physician, practice and regional level.  
  - **Scientific soundness** – Proven quality measure for pediatric prevention  
  - **Feasibility** – available in EMRs; ease of electronic data exchange  
  - **Face validity** – process measure  
  - **Precision** – highly accepted process measure  
  - **Minimum bias** – minimally affected by demographic factors  
  - **Construct validity** – recognized measure  
  - **Fosters real quality improvement** – actionable measure  
  - **Application** – used to identify patients requiring obesity counseling and closer medical supervision |

Measure Result Source – QDC  
Data Source - EHR

### Pediatrics – Asthma – Phase 2

<table>
<thead>
<tr>
<th>Measure</th>
<th>Rationale</th>
</tr>
</thead>
</table>
| ER Visits - Number of ER visits of patients with DX of asthma and Discharge Dx asthma related during measurement period | Appropriate care for patients with asthma should virtually eliminate the need for these patients to seek care in the ER through the prevention of morbidity associated with disease (e.g., Status asthmaticus). Regular practice/clinic based care should prove less expensive than ER based care. Therefore, tracking of this measure is a good surrogate for cost savings as well as quality. Analysis is compiled from a utilization data warehouse and reported on a physician, practice and regional level.  
  See above (ER Visits). This will trend utilization. |

Measure Result Source – TBD  
Data Source – Hospital Data (Treo)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>ER Visits (Trend) - Number of ER visits of patients with DX of asthma and Discharge Dx asthma related during measurement period and previous period (trend)</td>
<td>See above (ER Visits). This will trend utilization.</td>
</tr>
</tbody>
</table>

Measure Result Source – TBD  
Data Source – Hospital Data (Treo)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admissions - Number of admissions of patients with DX of asthma and Discharge Dx asthma related during measurement period</td>
<td>Appropriate care for patients with asthma should virtually eliminate the need for these patients to require hospital admission (e.g., Status asthmaticus). Regular practice/clinic based care should prove less expensive than hospital admissions. Therefore, tracking of this measure is a good surrogate for cost savings as well as quality. Analysis is compiled from a utilization data warehouse and reported on a physician, practice and regional level.</td>
</tr>
</tbody>
</table>

Measure Result Source – TBD  
Data Source – Hospital Data (Treo)
### Pediatrics – Asthma – Phase 2

<table>
<thead>
<tr>
<th>Measure</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Admissions (Trend)</strong> - Number of admissions of patients with DX of asthma and discharge Dx asthma related during measurement period and previous period (trend)</td>
<td>See above (Admissions). This will trend utilization.</td>
</tr>
<tr>
<td>Measure Result Source – TBD</td>
<td></td>
</tr>
<tr>
<td>Data Source – Hospital Data (Treo)</td>
<td></td>
</tr>
<tr>
<td><strong>Cost of Admission</strong> - Median cost of admission of patients with DX of asthma and discharge Dx asthma related during measurement period</td>
<td>Appropriate care for patients with asthma should virtually eliminate the need for these patients to require hospital admission (e.g., Status asthmaticus). Regular practice/clinic based care should prove less expensive than hospital admissions. Therefore, tracking of this measure is a good measure of cost savings as well as quality. Analysis is compiled from a payor data warehouse and reported on a physician, practice and regional level.</td>
</tr>
<tr>
<td>Measure Result Source – TBD</td>
<td></td>
</tr>
<tr>
<td>Data Source – Payor Data</td>
<td></td>
</tr>
<tr>
<td><strong>Cost of Admission (Trend)</strong> - Median cost of admission of patients with DX of asthma and discharge Dx asthma related during measurement period and previous period (trend)</td>
<td>See above (Cost of Admissions). This will trend costs.</td>
</tr>
<tr>
<td>Measure Result Source – TBD</td>
<td></td>
</tr>
<tr>
<td>Data Source – Payor Data</td>
<td></td>
</tr>
</tbody>
</table>

These measures will be collected and reported out of each participating practices’ electronic health record systems. These data elements will be securely transmitted through HIXNY to the EHR data warehouse (QDC).

Based on the data out of the electronic health records, the data out of the QDC is submitted to the Pods and participating providers. The Pods are then able to monitor and improve population health efforts by identifying patients with one or more of the six chronic conditions targeted for improvement. Data from the QDR is also monitored to identify any missing elements of the evidence based guidelines.

The Pods will also identify any assigned patient that is currently on ten or more medications. These patients will receive targeted interventions from the Pod’s pharmacists. The goals of intervention are to reduce the number of medications, ensure generics are used when possible, ensure formulary compliance, and manage medications for better health.
To ensure improvements in inpatient care, each local hospital will identify patients prior to discharge and provide a structured transition of care by proactively working with primary care providers. The ultimate goal is to provide support programs that will prevent readmissions and keep patients out of the emergency department.

In addition to careful selection and phasing of performance measures, intensive training in continuous quality improvement processes was identified as a need for participating practices. The Plan-Do-Study-Act (PDSA) process cycle was presented to each participating practice through one-on-one training sessions conducted by EastPoint Health. The PDSA cycle is recommended by the Institute for Healthcare Improvement to provide a shorthand method to test changes. The basics of this continuous improvement process are to plan the change, test the change, observe the impact of the change, and determine additional improvements. As the process becomes more familiar and natural, progressive organizations use this process on an on-going basis, beginning the next PDSA cycle immediately at the end of the initial PDSA cycle. In sophisticated, evolved organizations the initiation of the next PDSA cycle many times occurs before the ending of the first PDSA cycle, linking and accelerating the improvements. This training was instrumental in ensuring all pilot participants have the tools needed to meet the pilot program goals and transform the delivery of care.

Disease Management/Care Coordination

Participating practices within all PODs are utilizing an innovative and collaborative process entitled “The Care Management Program,” which manages an individual’s health needs through assessment, planning, and coordination and monitoring in an effort to best meet an individual’s health needs and to promote quality and cost efficient care.

The Care Management Program’s primary focus is to improve the care for individuals that meet specific criteria. This is accomplished both through new processes and through improved and coordinated dialogue between providers and patients to help guide patients through a continuum of services, rather than to compartmentalize their care. The Care Management Program is proactive and is designed to identify patients at risk, and subsequently intervening with the goal of improving the patient’s outcomes. The Program focuses on the continuum of care (ideally from the time the patient/provider relationship is started), addressing the needs of a defined patient population at a higher-than-average level of coordination and management. The goal of this approach is to maintain the patient at the most appropriate level of care, which should result in both improved outcomes and reduced costs.

In order to achieve the clinical and financial outcomes for this project, new processes must be established to first effectively identify patients needing managed care and then to proactively manage these patients to ensure that they can successfully meet the desired outcomes. These new processes must be patient-centric and coordinate care at the hospital, in the community,
and most importantly, the transition in between. Some of these new processes will require technology, some of them will require new personnel, but all of them will re-orient how medical care is provided from purely an episodic delivery model to a model that provides care coordination and active management.

The remainder of this section of the document will focus on the details of how to achieve these goals.

**Different Populations Requiring Modification to Standardized Approach**

As each POD must deliver care to communities which are unique from each other, the strategy and processes used to reach each POD’s goals will be different. That said, each POD was challenged to develop solutions to similar access-to-care issues to ensure a greater probability of achieving as consistent outcomes as possible. The variability among the PODs is due to the uniqueness of each patient population, the availability of resources internal to the POD, the availability of resources external to the POD, and the capabilities of clinicians and their supporting healthcare information technology infrastructure. Although standard processes overall delivers better outcomes, the uniqueness of each POD prevents total standardization to occur across all three PODs. When possible, the PODs should work to standardize processes internal to the POD. For example, Hudson Headwaters Health Network, a tightly integrated network of providers with a centralized organizational structure, is able to achieve levels of central standardization and efficiencies unavailable to more diverse PODs. Nevertheless, each POD is working to standardize processes as much as possible to achieve targeted goals. While each POD may not be able to achieve the standards set aside in this document, the goal of this document is to set out the “gold standard”, recognizing that each POD may have to alter the approach to accommodate their differences.

**Patient Populations**

Six different patient populations have been identified for this Care Management Project with the thought that these would be the starting populations that would most benefit most from this new model of care. Presuming that care can be better coordinated in a more cost effective manner with improved outcomes for these populations, it should be assumed that the scope of this project will be expanded to include other at risk populations.

The six initial patient populations are:

1. Adult - Hypertension
2. Adult - Diabetes
3. Adult - Coronary Artery Disease
4. Pediatrics – Preventive Services (primarily focused on immunizations)
5. Pediatrics – Obesity
6. Pediatrics - Asthma

**Overview of New Processes to Manage Patients**

The new processes to manage patients fall into five specific categories: 1) Patient Identification and Stratification, 2) Patient Outreach, 3) Clinical Encounter (Physician and Non-physician), 4) Patient Follow-up, and 5) Patient Monitoring. Each of these steps is illustrated in the diagram below, and detailed descriptions follow. Additionally, outlined are the questions posed to each POD to guide them in their development of POD-specific approaches to delivering on the agreed clinical and financial outcomes.

**Patient Identification and Stratification**

Patient identification is the process used to identify those patients with the targeted disease or condition (see list above). Stratification is the process by which these targeted patients are categorized on a variety of factors to help each POD prioritize outreach to these patients. Factors used for stratification include but are not limited to:

1) Severity of illness
2) Date of most recent visit
3) Willingness to change behavior
4) Does patient’s social/family environment support change? This is extremely important for pediatric patients as the parent’s ability or desire to change can be a much better predictor of success than a patient’s ability or desire to change.
5) Constraints that might prevent access to care or ability to change behavior, such as financial, scheduling, or transportation limitations.
While stratification could become a multi-dimensional process with very elaborate rules put in place, that approach would not be prudent at this point in time. Instead, the recommendation is to categorize patients according to a simple 2x2 grid. If it is necessary to prioritize patients based on limited resources, this grid can help identify which patients should get services in what order.

Each of the boxes in this chart is shaded one of three shades, from light to dark. The lightest shaded box (numbered 1), should be the first patient population to provide service to as they have the highest need and the most likely to take advantage of the program. The next darkest boxes (numbered 2), should be the next patient population to provide services to whereas the darkest shaded box (numbered 3), should be the last patient population to provide services to as the potential impact will be smaller and the difficulty will be higher.

<table>
<thead>
<tr>
<th>Severity of Illness</th>
<th>Ability / Willingness to Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Low</td>
<td>High</td>
</tr>
</tbody>
</table>

While stratification can be used to segment which population will receive services first, as described above, it can also be used to address the level of intensity or frequency that services are rendered. For example, the patients that have the highest severity of illness should be monitored more frequently and those patients who have more resistance or barriers to change may need more frequent or intensive interventions to help them change their behavior.

The first step in the identification of patients is to isolate the specific clinical criteria (ICD codes or range, CPT codes, or lab values) and other specific criteria (such as age) that meet the criteria for each patient population. These criteria should be consistent among all the PODs.

Hudson Headwaters Network has created an outstanding matrix providing detailed information about how best to identify patients per disease state and then follow up accordingly. This information is provided below:

<table>
<thead>
<tr>
<th>Identification</th>
<th>Stratification</th>
<th>Patient Outreach Activities</th>
<th>Outreach Conducted By</th>
<th>Monitoring/Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification</td>
<td>Stratification</td>
<td>Patient Outreach Activities</td>
<td>Outreach Conducted By</td>
<td>Monitoring/Follow-up</td>
</tr>
<tr>
<td>------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>----------------------------</td>
<td>---------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>DIABETES</strong></td>
<td>Adults between the ages of 18 and 75 with a diagnosis of Diabetes as evidenced by: ICD-9 Dx code of 250.0*, 362.0*, 357.2, 366.41, 648.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>At Goal:</td>
<td>Inform patient about Patient Portal and Health and Wellness</td>
<td>Athena Communicator call-Athena Support-monthly to patients identified during Pre-Visit Planning</td>
<td>Monitor for change in patient’s status quarterly</td>
</tr>
<tr>
<td></td>
<td>• A1C&lt;7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Low Risk (Light Touch):</td>
<td>Inform patient about his/her condition and provide Self-Management Support Plan, Community Resources and Self-Management Support Tools</td>
<td>Patient Mailing-Care Management Support-to patients identified through Pre-Visit Planning</td>
<td>Monitor for change in patient’s status quarterly</td>
</tr>
<tr>
<td></td>
<td>• No A1C in 12 months</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• A1C≥7 in 12 months</td>
<td></td>
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<tr>
<td>3.</td>
<td>Moderate Risk (Medium Touch)</td>
<td>Direct contact by Care Manager with needs assessment for referral to Certified Diabetes Educator, Pharm-D and CSW interaction as needed</td>
<td>Care Management-to patients identified during Pre-Visit Planning or Disease Registry Query</td>
<td>Ongoing follow-up based on individualized patient-centered plan of care based on risks and patient goals. Typically quarterly contact between Care Manager and patient</td>
</tr>
<tr>
<td></td>
<td>• A1C &gt; 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• No office visit with primary care provider for chronic condition in 12 months</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Newly diagnosed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• New to insulin</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4.</td>
<td>High Risk (Heavy Touch)</td>
<td>Initial contact by Care Manager with needs assessment for referral to Certified Diabetes Educator, Pharm-D and CSW interaction as needed</td>
<td>Care Manager with CSW/Pharm-D/Certified Diabetes Educator as needed</td>
<td>Ongoing follow-up based on individualized patient-centered plan of care based on risks and patient goals</td>
</tr>
<tr>
<td></td>
<td>• Hospitalization for Diabetes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Frequent Emergency Room use related to Diabetes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Predictive Modeling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HYPERTENSION</strong></td>
<td>Adults between the ages of 18 and 85 with a diagnosis of Hypertension as evidenced by: ICD-9 Dx code of 401.0*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>At Goal:</td>
<td>Inform patient about Patient Portal and Health and Wellness</td>
<td>Athena Communicator call-Athena Support-monthly to patients identified during Pre-Visit Planning</td>
<td>Monitor for change in patient’s status quarterly</td>
</tr>
<tr>
<td></td>
<td>• BP&lt;140/90</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Low Risk (Light Touch):</td>
<td>Inform patient about his/her condition and provide Self-Management Support Plan, Community Resources and Self-Management Support Tools</td>
<td>Patient Mailing-Care Management Support-to patients identified through Pre-Visit Planning</td>
<td>Monitor for change in patient’s status quarterly</td>
</tr>
<tr>
<td></td>
<td>• BP&gt;140/90</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Moderate Risk (Medium Touch)</td>
<td>Direct contact by Care Manager either over the phone or in person to assess readiness to participate in Care Management Program and development of individualized patient-centered plan of care</td>
<td>Care Management-to patients identified during Pre-Visit Planning or Disease Registry Query</td>
<td>Ongoing follow-up based on individualized patient-centered plan of care based on risks and patient goals. Typically quarterly contact between Care Manager and patient</td>
</tr>
<tr>
<td></td>
<td>• BP=140/90 and LDL=130</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• No office visit with primary care provider for chronic condition in 12 months</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Newly diagnosed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>High Risk (Heavy Touch)</td>
<td>Initial contact by Care Manager with needs assessment for referral to Certified Diabetes Educator, Pharm-D and CSW interaction as needed</td>
<td>Care Manager with CSW/Pharm-D/Registered Dietician as needed</td>
<td>Ongoing follow-up based on individualized patient-centered plan of care based on risks and patient goals</td>
</tr>
<tr>
<td></td>
<td>• Hospitalization for Hypertension</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Frequent Emergency Room use related to Hypertension</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>• Predictive Modeling</td>
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</tr>
<tr>
<td><strong>Coronary Artery</strong></td>
<td>3. At Goal:</td>
<td>Inform patient about Patient Portal and Health and Wellness</td>
<td>Athena Communicator call-Athena Support-monthly to patients identified during Pre-Visit Planning</td>
<td>Monitor for change in patient’s status quarterly</td>
</tr>
<tr>
<td></td>
<td>• LDL&lt;100</td>
<td></td>
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</tbody>
</table>
Identification of patients to be included in this project can occur in one of three different ways:

1. Patient is identified from physician practice’s population as already having met the clinical and other appropriate criteria. The first time this process is done, most of the patients will be identified. However, due to changes in lab values or other clinical indicators, this process will need to be repeated on a regular basis. The following steps should be taken to best accomplish identifying these patients:
   a. Pre-Visit Planning Reports: Every week, a report should be run for the patients scheduled for a visit the following week to identify patients that would meet clinical criteria for inclusion in this program. However, as new appointments will be created after this report is created, the registration process should be modified to flag those patients that might fit criteria.
   b. Disease Registry Monitoring - a Disease Registry should be maintained of patients diagnosed with one or more of the identified disease condition. The registry should contain both demographic and clinical outcomes data (such as pertinent lab values). Registry Reports should be compiled monthly to identify patients who may benefit from Care Management services.
   c. Preventive Screening/Services Reports: Reports to identify patients who are in need of preventive screening/services (i.e. cervical cancer screening,
mammogram and colonoscopy) should be run quarterly for the purposes of patient outreach.

d. Ad Hoc reporting should be available to create as needed reports to supplement those mentioned above.

e. Collaboration with Insurance Companies – coordination should exist between POD and local insurance companies who actively identify patients in need of care coordination services, so that these patients are referred to the POD for management under this program, presuming appropriate clinical criteria have been met.

2. Patient is identified when seeing physician (PCP or specialist) that he/she newly meets criteria.

3. Patient is identified upon discharge from the hospital (inpatient or ER) that he/she newly meets criteria. Ideally, the hospital personnel will have access to the registry and can identify if a patient should be added to the program. Alternatively, if the POD has access to Daily Admission Activity Reports, these reports could be used to identify patients who meet clinical criteria and may also benefit from Transition Care Management.

While the below table presumes that most patients will be identified through a retrospective review of the practice’s current patients (see step 1 above), the same rules can be applied to patients that newly meet the criteria (see steps 2 and 3 above).

<table>
<thead>
<tr>
<th>Patient Identification and Stratification</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify patients with targeted diseases</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create patient registry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stratify patients on severity of disease and other parameters (e.g., patients regularly seen and under care)</td>
<td>Using practice management and EMR data, identify all patients that qualify as having targeted disease state.</td>
<td>Use of CPT codes and/or diagnostic codes and/or lab values</td>
</tr>
<tr>
<td>DM considerations</td>
<td></td>
<td>Other factors per POD</td>
</tr>
<tr>
<td>CAD considerations</td>
<td></td>
<td>Other factors per POD</td>
</tr>
<tr>
<td>HTN considerations</td>
<td></td>
<td>Other factors per POD</td>
</tr>
</tbody>
</table>

| Identify patients with targeted diseases |             |          |
| Using practice management and EMR data, identify all patients that qualify as having targeted disease state. | Use of CPT codes and/or diagnostic codes and/or lab values |
| Using practice management and EMR data, identify patients with targeted disease, stratifying them based upon a variety of factors that can deliver on chosen measures. Considerations are based upon the disease process. (see below) | Use of CPT codes and/or diagnostic codes and/or lab values. Decide upon which patients will most benefit from intervention and investment of resources. |
| 1. Does patient have a recorded HbA1c? |
| 2. Time since last HbA1c |
| 3. Value of most recent HbA1c (use measures for guidance on significance of value) |
| Other factors per POD |
| 1. Does patient have a recorded LDL-C? |
| 2. Value of most recent LDL-C (use measures for guidance on significance of value) |
| Other factors per POD |
| 1. Does patient have a recorded BP reading? |
| 2. Value of most recent BP reading (use measures for guidance on significance of value) |
| Other factors per POD |
Patient Identification and Stratification

<table>
<thead>
<tr>
<th>Patient Identification and Stratification</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Ped – Prevention considerations</td>
<td>1. Has patient received all immunizations per measures?</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Ped – Obesity considerations</td>
<td>1. Has patient and family received obesity education?</td>
<td>Other factors per POD</td>
</tr>
<tr>
<td></td>
<td>2. Change in BMI</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Comparing 2 most recent HbA1c values (use measures for guidance on significance of value)</td>
<td></td>
</tr>
<tr>
<td>• Ped – Asthma considerations</td>
<td>1. Patient with hospital admission for asthma</td>
<td>Other factors per POD</td>
</tr>
<tr>
<td></td>
<td>2. Date of last hospital admission for asthma</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Frequency of hospital admissions for asthma over time period (e.g., 12 months)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Patient with an ER visit for asthma over time period (e.g., 12 months)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Date of last patient ER visit for asthma</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Number of patient ER visits for asthma over time period (e.g., 12 months)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Appropriate medication for asthma (use measures for guidance on significance of value)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. Appropriate medication compliance (is member taking medication according to dosage instruction)</td>
<td></td>
</tr>
</tbody>
</table>

Table 2

Questions and considerations presented to each POD include:

1. Describe in detail how patients will be identified and stratified for interventions for inclusion in a disease specific patient registry.

2. Be sure to detail each of the steps taken, the resources utilized, and the frequency of the activity.

3. Do not forget to detail how patients will be stratified and the reasons for choosing such a stratification strategy. Considerations may include availability of local resources, clinical factors, ongoing clinical projects, and expertise of the practice. Please pay close attention to the considerations noted in the *patient identification and stratification* table (See Table 2.) and address them as specifically as possible.

4. The information provided here will form a detailed road map on how care will be provided to the targeted population to achieve the project’s clinical and financial goals.

**Patient Outreach**

Once patients have been identified and stratified, an efficient and effective process must be utilized to contact these patients and engage them in an evidence-based longitudinal care process. It is expected that a number of patients will decline participation in this proactive care delivery effort and will only seek care on an emergency basis, a result consistent with previous disease management efforts. However, it is critical to not exclude patients from this project just
because they have not shown compliant behavior in the past. Lack of compliance is oftentimes misinterpreted as lack of desire or interest in properly caring for themselves or their family. However, this might not be accurate. As such, it is important to understand the patient’s motivation for their behavior.

For example, a male head of household that is holding down two jobs in order to stay off public assistance might resist seeing a physician on a regular basis due to the inability to easily take time off from work. This is especially true for routine care driven by an asymptomatic, chronic disease such as hypertension. However, if properly educated on the ramifications of leaving the disease untreated, he might be better motivated to obtain regular routine check-ups and proper medication therapy to reduce the probability of his getting seriously ill where he is then unable to properly care for his family. By addressing the key reason a patient is not seeking care; it is very possible to transform a non-compliant patient into a compliant one.

For those patients willing and able to participate in a project that can improve their overall health and quality of life, outreach to these patients must be broad-based, consistent, and effective in achieving regular participation. Such participation includes scheduling and completion of necessary clinical visits (e.g., physicians, educators, therapists, pharmacists) to create, deliver, monitor, and adjust the prescribed therapeutic plan. Such a plan encompasses evaluation, education, and specific therapies (e.g., pharmaceuticals, diet, and exercise). Effective outreach, whether using outbound calling, email, text messaging, etc. delivers high levels of appointment completion consistent with frequency dictated by evidence-based guidelines of the realities of the patient’s clinical condition. (See Table 3) Each plan is also developing a community based communication plan to raise the awareness of the project and its benefits to those who participate.

**Methods of communication**

There will be three primary components to the communication strategy for this program: 1) Automated outbound communication; 2) Inbound communication; and 3) Easy access to Patient Education.

The automated outbound communications could take the form of email, telephone call, text message, or even postal mail. The choice should be decided primarily by the urgency of the communication and the likelihood that the patient (or family) will respond in the desired manner, providing that the system selected supports this level of variability. The other factor that must be considered is the feasibility of such communication – if a patient does not currently have phone service at home due to financial constraints, than outbound calling would not be appropriate. As such, one communication approach may work exceptionally well for one patient whereas another communication approach will work much better for another patient.
Alternatively, the Pod may decide it is best to take a standardized approach, such as phone calls three days apart for one week, then emails three days apart for one week, then send a letter or postcard if still no response.

A centralized call center can be most beneficial to deal with after-hours patient support, such as help in scheduling appointments or requesting refills or referrals. Of course, this will require access to at least a centralized scheduling system and preferably the office’s EMR. The primary value in having the call center solution is that often patients respond to the outbound communication after normal office hours and there is little value in reaching out to a patient to schedule an appointment if the patient is unable to easily accomplish that goal when responding from home in the evening. Alternatively, the Pod could offer a patient portal which could provide for most of these functions but depending on the population, this might not be pragmatic.

When creating the outreach strategy, one must consider the availability of resources in the population and how the community can support those patients that do not have readily available options, such as internet access. In many cases, patients in these populations will not have computer access from home and many that are working will not be able to access a computer from work. However, many communities do provide alternatives, such as computers in libraries or in other accessible locations. As part of the outreach process, it should be identified for each patient or caregiver for pediatric patients, what methods of communication are available to them. The following seven questions are designed to determine this, and depending on these answers, what alternatives might exist in the community.

1. Do you have a phone at home that can be used for inbound calls?
   a. Do you have an answering system that is checked regularly?
2. Do you have a cell phone and if so, can you receive text messages?
3. Do you have a phone at work that can be used for inbound calls?
   a. Is it feasible to leave a message for you?
4. What times can you be called, at home or at work?
5. Do you have access to a computer and the internet at home or at work?
6. If not, can you utilize a computer at a family member, friend, or in the community?
7. If more than one option is available, what is your preferred method of outbound communication?

Lastly, the Pod should be able to prescribe easy accessed educational information. In general, the best solution would be to provide this through a patient portal so the patient, or their family, can access from a home, work, or community based computer, such as one in a library. However, if computer access is limited, another alternative is to deliver the education through postal mail, although this is much harder to track compliance this way. It is also important that
all patient education be readily available during an office visit, so the patient can leave the office with the printed materials in hand. Lastly, as much of the education could be related to medication management, community pharmacists and hospital discharge planners should also have access to deliver the same educational information to the patients. This is especially important when discharging a patient from a hospital on a new medicine.

Questions and considerations presented to each Pod are outlined below.

1. Describe in detail the communication plan applied to patients identified and stratified per each targeted disease.

2. Be sure to include detail on how patients will be contacted, the frequency of outreach (e.g., number and modality of attempts to contact patients), the escalation process if no response is received, and what resources will be utilized to complete these activities.

3. This section requires a detailed description of activities, including, but not limited to:
   a. Establishing and staffing a call/communication center,
   b. How to ensure reliable communication among communication center, practices, community resources, and patients.
   c. An accounting of the technologies and personnel resources that will be utilized in patient outreach.
   d. An approach to measuring the effectiveness of the communication strategies with the goal of continuous improvement. If, for example, response rates from each type of communication approach should gathered and evaluated as it may be determined that some of these are not effective and should be discontinued while others should be enhanced.

4. These details form the roadmap, including governance, of the patient outreach activity.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Outreach</td>
<td>Contact patients identified and stratified to engage them in care delivery</td>
<td></td>
</tr>
<tr>
<td>✤ Develop patient outreach</td>
<td>Specify, in detail, processes used to contact patients and schedule them for</td>
<td>Patient outreach requires a detailed analysis of how patients are contacted and consideration of all potential decision points of the process.</td>
</tr>
<tr>
<td>methodology</td>
<td>needed office visits and testing (e.g., lab, imaging). Develop a detailed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>flow chart of processes including decision points, staffing, and governance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(e.g., rules followed during contact activity)</td>
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</tbody>
</table>
### Table 3

<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>What modalities will be used to contact patients? (Phone, email, mail, text messages)</td>
<td>Careful consideration of available resources is important in setting these rules. Clinical considerations must also drive rules development. Without detailed rules, variability of care will appear due to the differences between those contacting patients as well as differences among practices. Standardization of processes ensures more consistent outcomes while allowing for improvement of processes in an effort to deliver enhanced levels of care. Evaluation of the rules should be completed on a periodic basis to determine if improvements can be accomplished.</td>
</tr>
<tr>
<td>2.</td>
<td>How will those modalities be used to contact patients? In what order? How often?</td>
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<tr>
<td>3.</td>
<td>Will the approach be standardized for all patients, by disease type, or based on patient preference?</td>
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</tr>
<tr>
<td>4.</td>
<td>What entity will contact patients? (Practices, call center, Pod)</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Who, within entities, will contact patients? (Physician, nurse, case manager, social worker, pharmacist, etc.)</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>What are the rules that govern how patients are contacted including frequency, effort made to contact them, tracking of those refusing treatment, accommodation of patient requirements for contact modality, etc?</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>What information can be shared either on a telephone message or with another family member or co-worker, if the patient is not immediately available?</td>
<td></td>
</tr>
</tbody>
</table>

- **DM considerations**
  1. Frequency of lab testing due to guidelines and lab values (e.g., HbA1c)
  2. Patient education (e.g., in-office and community services)
  3. Patient monitoring and follow-up
  Factors such as date or value of last lab test will impact the frequency of patient outreach and the types of outreach required (e.g., education)

- **CAD considerations**
  1. Frequency of patient monitoring
  2. Medication education
  Not expected to require large investment in outreach due to few factors requiring intervention

- **HTN considerations**
  1. Frequency of patient monitoring
  2. Medication education
  Not expected to require large investment in outreach due to few factors requiring intervention

- **Ped – Prevention considerations**
  1. Family education and follow-up
  Not expected to require significant outreach due to already existing efforts to immunize children

- **Ped – Obesity considerations**
  1. Patient and family education (e.g., in-office and community services)
  2. Patient monitoring and follow-up
  Requires repetitive “touches” due to complexity of disease risk factors (e.g., family involvement)

- **Ped – Asthma considerations**
  1. Patient and family education
  2. Medication management, including issues of compliance
  Outreach will be determined by how well the patient is being managed on current medication

### Care Delivery and Coordination

Care delivery and coordination encompasses all clinical activities including those provided by physicians, nurses, pharmacists, social workers, nutritionists, educators, and others. For clarity, activities provided by non-physicians are described separately from those of physicians. Nevertheless, all clinical interventions are included and described in this section as they represent activities that work toward improving and maintaining patient health while offering a
comprehensive, holistic view of the patient and the interventions required to keep the patient well. This represents a team approach to disease management rather than a disconnected, episodic approach to correcting acute problems.

Coordination/Structure of Care Interventions

There are multiple touch points to ensure care is coordinated across the continuum. True coordination has rarely occurred in traditional care delivery. In the “gold standard” coordination occurs within the hospital setting AND continues as patients seek care in the home or outpatient setting as appropriate. The major activities for each function are listed below.

Hospital Case Management Role

- Identify patients conduct patient visits in preparation for discharge.
- Interface with hospital provider and promote scheduling of post-hospital visit prior to discharge.
- Initiate home care referral where appropriate
- Submit a daily fax (or other suitable mean of notice) to the Care Manager of the patients who meet the criteria for inclusion in the Care Management Program, and where possible identify patients that have been referred to Public Health.

Hospital Provider Role: It is strongly felt that patients will be more engaged with the program if the provider counsels them about the program.

- Reinforce Care Management Program as a Standard of Care
- Assure an appointment is scheduled with the PCP’s team within 5-7 days of discharge (14 days at most).
- Pay careful attention to the details of medication reconciliation.
- Order other specific education that would be helpful to keep the patient stable after discharge. (Hospital Nursing is responsible for education at discharge.)

Home Care Role

- Conducts home visits and complete goals
- Interact with Care Manager as needed
- Refer patients to Care Management where appropriate

Care Manager Role
Monitor daily admission reports to identify patients who meet care management criteria and track hospital course on hospital electronic record system or through phone contact with hospital Case Manager
Interact with hospital provider as needed to coordinate initial patient contact
Make telephone contact with patient/care giver within 24-72 hours post-discharge.
Facilitate scheduling of post-hospital appointment, if not already done, and re-enforce need to keep appointment.
Conducts 3-4 phone calls post-discharge to complete outlined program goals (additional calls can be made based upon patient need)
Document patient interaction in EMR or registry as appropriate
Communicate with primary care provider as needed
Attend post hospital office visit where deemed beneficial

Office Provider Role
- Review medication reconciliation and clarify discrepancies as needed
- Review order set in EMR
- Interact with patient and Care Manager as needed

The team approach to care coordination is a markedly different approach that what is provided in a traditional episodic treatment approach to care. While many of the same activities might happen in the traditional office setting, in an office dedicated to care coordination, it is imperative that specific roles and responsibilities are identified in advance to make sure that the patient’s care is managed throughout the treatment of his/her condition. As such, it is important to identify specific individuals in the team and the roles that they will be playing. Detailed information on each of these key roles is provided.

Provider
The provider’s role in the Care Management program has three primary functions. First, he/she diagnoses patients thereby determining if they meet the criteria for inclusion in the disease management program. Second, he/she develops an individualized treatment plan for each patient in the program based on clinical findings. This treatment plan is then be used by the Care Manager and the other Care Coordination team members to provide services as appropriate to the patient. Lastly, the provider monitors and adjusts the patient’s treatment plan as appropriate based on any new clinical findings.

It is important to note that one of the key requirements for care coordination is medication management, including medication reconciliation and medication compliance review. Having a
complete medication history is critical to properly perform that function. As such, one of the many tools that will be used to ensure the best possible care coordination is the use of electronic prescribing. In an effort to make best use of this technology and to provide the best management of a patient’s medication, the use of a Clinical Pharmacist is recommended.

**Clinical Pharmacist**

Clinical Pharmacists will provide comprehensive medication management as follows:
The common elements of two definitions can be used to describe this service in the medical home—the definition offered by the American Medical Association (AMA) when it provided current procedural terminology (CPT) payment codes for the delivery of medication management services and the definition provided by legislation for Minnesota Medicaid recipients. These definitions have the following five elements in common relevant to the needs of patients being cared for in the medical home:

1. The service (medication management) needs to be delivered directly to a specific patient.
2. The service must include an assessment of the specific patient’s medication-related needs to determine if the patient is experiencing any drug therapy problems. A care plan is developed to resolve the problems, establish specific therapy goals, implement personalized interventions and education, and follow up to determine the actual outcomes the patient experienced from taking the medications.
3. The care must be comprehensive because medications impact all other medications and all medical conditions.
4. The work of pharmacists and medication therapy practitioners needs to be coordinated with other team members in the PCMH.
5. The service is expected to add unique value to the care of the patient.

The Clinical Pharmacists performing comprehensive medication management services will perform the following activities in a systematic manner:

1. Assess the patient’s medication-related needs
2. Identify the patient’s medication-related problems, outlining:
   a. Appropriateness of the medication
   b. Effectiveness of the medication
   c. Safety of the medication
   d. Adherence to the medication
3. Develop a care plan with individualized therapy goals and personalized interventions.
4. Follow-up evaluation to determine actual patient outcomes.
The comprehensive medication management services provided by the clinical pharmacists at CVPH Medical Center (acting as a model for the other Pods) will produce the following tools that can be used by the other clinicians on the team.

1. A description of the patient’s medication experience.
   a. Includes a description of how the patient makes decisions about the medications he/she takes in a cultural and holistic context
   b. Provides a complete medication history and current medication record, complete with how the patient actually takes the medications.
   c. The complete medication record is provided to both the patient and the prescribing providers so everyone is aware of all the medications and how they are taken.

2. A list of medication related problems that need to be addressed.

3. Care plan goals of therapy individualized to the patient

4. Measurable outcome parameters personalized for each patient

5. Interventions personalized for each patient (education, tools etc.).

6. Routine follow-up evaluation of actual outcomes related to medication use.

The clinical pharmacist specifically works with all enrolled patients on ten medications or more. By actively managing the heavy utilizers of medications, significant improvements in health outcomes and financial improvements should be measurable.

**Other Care Coordination Roles**

As mentioned above, care coordination involves hospital, community, and office personnel. In addition to those highlighted and outlined in more detail above, there are two other critical roles which should be further defined – the clinical social worker and the office based care manager.

**Clinical Social Worker**

The Clinical Social Worker will serve an assessment, coordination, education, and counseling role for the Care Management program.

Assessment - The social worker will work with the care manager to assess the patient and their family, as appropriate, to determine if they are an appropriate candidate for inclusion in this program. Most important, the social worker will work to best understand any barriers to a patient’s participation in the program including understanding the importance of therapeutic compliance (see hypertension example above). If any barriers are identified, the Social Worker, in coordination with the Care Manager, may work towards educating the patient and family in an attempt to remove such barriers.
Coordination – As part of the care plan for a patient, many external resources may be utilized to best ensure that a patient is meeting the goals of his care plan. These external resources could include: smoking cessation, weight loss, disease condition educational classes, and exercise programs. The social worker can assist the Care Manager in coordinating these resources for the patient and his/her family.

Education – In some cases, external resources may not exist in a community for programs such as smoking cessation (e.g., NYS Smokers Quit line) or weight loss. In this case, the Social Worker might be best suited amongst the care coordination team to run these classes on behalf of the POD.

Counseling – Changing behavior is a very difficult process for many people and the patients that will be included in this program already have many social and economic difficulties they are dealing with. As such, the Social Worker will create support groups to provide the additional emotional support to help keep the patients engaged in the program. In addition, the Social Worker should also be available on as needed basis to provide individualized support to the patients in the program.

Care Manager

Care delivery can occur at the hospital, at both the primary care and specialist’s offices, in the community, or at the pharmacy. As these services can be provided by multiple different people in multiple locations, it is critical that one person is responsible for the care plan for each patient. This is the role of the Care Manager who must not only create the care plan, in collaboration with the patient’s primary care physician, but also must coordinate all care provided by community resources. As such, one of primary roles of the Care Manager is to gain familiarity with the patient’s medical plan of care in its entirety so they may seek to intervene early to maintain or improve the patient’s health status using multiple interventions.

Once a patient has been identified and accepted for Care Management services, the Care Manager will assume responsibility for assessment, coordination and intervention, communication, education and ongoing monitoring and evaluation. However, it is important to understand that the while in some cases the Care Manager may provide some of these services, the primary role of the Care Manager is to coordinate the care provided on behalf of the patient, regardless of who is providing the care and where it is delivered.

Although the sequence of Care Management activities is generally the same, the plan for each care-managed patient is unique to the particular circumstances of the individual patient. Thus, the individualized plan of care for patients with the same diagnosis or condition can vary widely based on variations in support systems, geographic areas, provider and community resource availability and psychosocial elements.
Once a patient has been identified as meeting the guidelines via the process outlined above, a Care Manager will assume responsibility for gathering information necessary to accurately assess the patient’s needs. Information, obtained from the patient, electronic medical records, and any providers, is then analyzed by the Care Manager. The Care Manager utilizes an assessment tool to determine the patient’s readiness for the care management program. As discussed in the stratification section above, one of the initial goals of care management is to identify patient readiness as well as any barriers, problems, or issues the patient or family may have in self-managing the condition. Another goal of Care Management is the development of an individualized patient-centered plan of care based on risk and patient goals.

Following a patient’s enrollment, the Care Manager explores the various options available to meet the patient’s individual needs. Input from the patient and all providers is essential in the development of an effective and successful individualized plan of care. It is important that in developing this plan, the Care Manager leverages information from multiple sources of clinical data while not just focusing on information known to the PCP’s office. This should include information from the hospital to determine if the patient is a “frequent flyer,” and information from the pharmacy to determine if the patient has been compliant with medications. In the ideal world, this information is readily available in the patient’s electronic chart.

The Care Manager will work with the patient and/or caregivers to identify the areas for intervention. Interventions typically include:

1. Self-Management Education;
2. Skills Review;
3. Symptom Monitoring;
4. Medication Management;
5. Condition Monitoring – i.e., annual dilated eye exam; annual foot exam; etc;
6. Individualized Plan of Care;

During planning each problem area is tied to a corresponding expected outcome (goal) and a patient-centered individualized plan of care is developed. The individualized plan of care may include both short term and long-term goals; time frames for follow-up and evaluation, resources to be utilized, collaborative approaches, rationale for closure for anticipated outcomes. The individualized plan of care is created with the patient for the purpose of promoting self-management of the patient’s disease.

The Care Manager is responsible for determining whether a Clinical Social Worker and/or Clinical Pharmacist could be beneficial in assisting in the development and delivery of the individualized plan of care.
After an individual individualized plan of care is established, the Care Manager assumes a lead role in communicating the plan to the appropriate parties. The Care Manager is also responsible for coordinating additional resources including but not limited to:

1. Referral to Self-Management Support Service (such as a Certified Diabetes Educator)
2. Contact with the Clinical Social Worker assigned to Care Management
3. Interaction with the Clinical Pharmacist related to medication regimes, etc.
4. Referral to other community resources for self-management support or additional care management services

Care Management is a dynamic process, and once implemented, requires careful monitoring and adjustment of the individualized care plan by the Care Manager as needed. Assessment of the overall effectiveness of the plan in progressing the patient toward established goals, providing quality outcomes, and containing costs is ongoing. Plans deemed ineffective are revised as needed to maintain continual progress, establish new goals and maintain quality.

Given the extent of the Care Manager’s role and the importance of this individual to the care coordination team, a sample job description is included below.

**Care Manager’s Job Description**

I. **Qualifications:**
   A. Current New York State R.N. license required.
   B. B.S. Degree preferred.
   C. CPHQ required within two years.
   D. Minimum five years of broad current clinical nursing experience, to include specialty units
   E. Quality assurance/risk management occurrence investigation experience required.
   F. A high level of interpersonal skills and professional poise to interact with Medical Staff, other department staff, and Medical Center management is required.
   G. Assessment and goal setting skills, project/time management skills, and problem solving skills are required.
   H. Knowledge of Department of Health, JCAHO, Medicare, and Long Term Care regulations is required.
   I. Knowledgeable in managed care processes is required.
   J. Computer skills required.
   K. Good writing skills.
   L. Working knowledge of statistical tools.
   M. Performance Improvement teaching skills required (able to teach PI to hospital staff).
   N. Utilization review and discharge planning experience preferred.
   O. Knowledge of the prospective payment system and current insurers payment methodologies, coding and sequencing, and data collection and analysis.
   P. Education and presentation experience preferred.
As applicable, the individual has training/competency in attending to the special needs and/or behaviors appropriate to the age of the patients for which care is being provided.

II. **Job Description:**
The Care Manager will monitor and analyze data and identify where care coordination is needed in the specific patient populations identified for this program. The Care Manager will also work with physicians, hospital discharge planners, social workers, pharmacists, and others as appropriate, to develop and monitor the care plan for each patient based on the guidelines of this program.
The Care Manager utilizes his/her skills to coordinate internal and external resources to facilitate appropriate resource management of an age specific patient population which spans from newborns to geriatrics, identifying opportunities for process improvement, high risk cases and sentinel events, to the achievement of an acceptable outcome.

Questions and considerations presented to each POD are outlined below:

1. Describe in detail the clinical process adopted by the Pod to achieve care coordination, after careful consideration of the disease specific clinical guidelines, that will work to deliver the targeted clinical and financial outcomes.
2. These care coordination processes must reflect the available technologies, ongoing clinical initiatives, and available community resources.
3. In development of these clinical processes, consideration of existing best practices must be taken into account. This will form a road map of the best practice clinical processes for the Pod.

Table 4 details the considerations taken by each POD in delivering an expansive list of clinical interventions provided by a diverse team of professionals to achieve targeted clinical and financial outcomes.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clinical Encounter</strong></td>
<td>Utilizing the guidelines for each disease while considering the resources available in each practice, describe the clinical activities that will be applied to achieve clinical and financial targets</td>
<td></td>
</tr>
</tbody>
</table>
| ✤ **Clinical factors and interventions** | 1. Develop a list of standardized clinical services provided to patients based upon current disease state and guideline requirements  
2. Inventory community resources available for use in improving outcomes for each targeted disease  
3. Identify processes that can enhance the probability of achieving improved outcomes | Detailed and comprehensive description of services to be provided to each patient for each targeted disease. Includes the clinical and other resources provided to deliver the services. |
<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>• DM considerations</td>
<td>1. HbA1c testing and follow-up per guidelines 2. LDL-C and lipid monitoring per guidelines 3. Nephropathy assessment per guidelines (e.g., modified based upon set protocol for each practice/Pod – microalbumin/creatinine ration vs. 24 hour urine for microalbuminuria) 4. Eye exam per guidelines 5. Foot exam per guidelines 6. BP and screening for HTN 7. Smoking cessation per guidelines 8. Formulary compliance</td>
<td>Each pod will determine what the allocation of resources to each of these measures. Availability of community resources will impact the effort applied to achieve specific outcomes.</td>
</tr>
<tr>
<td>• CAD considerations</td>
<td>1. LDL-C monitoring (per guidelines) 2. Formulary compliance 3. Medication education (e.g., in-office and community based) 4. Nutritional education (e.g., HTN and obesity)</td>
<td>Inventory and utilize available community resources</td>
</tr>
<tr>
<td>• HTN considerations</td>
<td>1. HTN monitoring (per guidelines) 2. Obesity screening 3. Medication education (e.g., in-office and community based) 4. Nutritional education (e.g., HTN and obesity) 5. Formulary compliance</td>
<td>Inventory and utilize available community resources</td>
</tr>
<tr>
<td>• Ped – Prevention considerations</td>
<td>1. Immunizations per guidelines</td>
<td>Inventory and utilize available community resources</td>
</tr>
<tr>
<td>• Ped – Obesity considerations</td>
<td>1. Patient and family nutrition education 2. Lab values (per guidelines and practice preferences – e.g., LDL-C, glucose, HbA1c)</td>
<td>Inventory and utilize available community resources</td>
</tr>
<tr>
<td>• Ped – Asthma considerations</td>
<td>1. Appropriate medication use 2. Formulary compliance</td>
<td>Inventory and utilize available community resources</td>
</tr>
</tbody>
</table>

**Patient Monitoring and Follow-up – Acute Phase**

After patients receive care through clinical encounters, the results of those interventions require monitoring and follow-up as appropriate. There are two phases of this follow up, an acute phase and a longitudinal monitoring phase. The goal of the acute phase is to get the patient to a treatment plan that is stable whereas the goal of the longitudinal phase is to continue evaluating the patient’s status on a periodic basis, such as every 6 months, and adjust the plan as necessary.

During the acute phase, frequent monitoring must occur until a stable care plan can be established. As such, this process can be iterative. During this phase, results include laboratory tests, completion of referral visits (e.g., podiatrist, diabetes educator, pharmacist, social worker) and participation in community-based programs (e.g., diet program, exercise classes).
will be evaluated. Only through follow-up of results will patients be more likely to complete the necessary treatment program prescribed by their physician. These activities assist patients in managing their chronic disease, an often difficult burden for anyone irrespective of their socioeconomic status. This phase will continue until meds, if appropriate, are no longer being adjusted and tests are no longer being ordered on a routine basis.

Table 5 describes some of the consideration each POD evaluating in their development of processes and workflows to achieve specific outcomes. Questions and considerations presented to each POD are outlined below.

1. Describe in detail the follow-up steps to be prescribed to ensure continuity of care for the patient after each clinical encounter.
2. Consider the factors noted in the below table for “Patient Follow-up” and develop detailed processes to achieve targeted clinical and financial outcomes.
   a. Of significant important is the clinical decision support that staff will follow to direct patients to their next clinical encounter or referral to clinical services.
   b. This clinical decision support must reflect best clinical practice and availability of resources. In addition, its detail must be robust enough to ensure a low level of variability among personnel providing this service.
   c. Both available Pod (e.g., pharmacist, nurse, social worker, clinics) and community resources must be reflected in the clinical decision support algorithms provided.

<table>
<thead>
<tr>
<th><strong>Patient Monitoring and Follow-up – Acute Phase</strong></th>
<th>Follow-up on clinical patient visits (ambulatory and hospital), patient appointments for testing, education, etc. Monitor lab results and utilize these results in decisions on follow-up (e.g., repeat office visit, further testing, prescribed medication or intervention)</th>
<th>Each clinical encounter generates a follow-up activity. These include the need to schedule another office visit or a longer list of required services. Each prescribed intervention requires monitoring of results and a clinical decision to be made on next steps in treatment. Specific, explicit criteria are required to govern the clinical decision process during this phase of patient management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Develop patient follow-up methodology</strong></td>
<td>Create flow chart of each clinical activity requiring follow-up and assigning the appropriate resource to that activity. At each decision point, clinical rules, where appropriate, must be assigned to direct consistent care.</td>
</tr>
<tr>
<td></td>
<td><strong>DM considerations</strong></td>
<td>1. HbA1c testing and follow-up per guidelines (if not done before clinical visit) 2. LDL-C and lipid monitoring per guidelines (if not done before clinical visit) 3. Nephropathy assessment per guidelines (e.g.,</td>
</tr>
</tbody>
</table>
modified based upon set protocol for each practice/Pod – microalbumin/creatinine ration vs. 24 hour urine for microalbuminuria) (If not done before clinical visit)
4. Eye exam per guidelines (includes scheduling and reporting results)
5. Foot exam follow-up (e.g., podiatrist care)
6. HTN nutritional education (e.g., education, enrollment)
7. Smoking cessation education (e.g., education enrollment, coordinate community resources)
8. Medication compliance (e.g., prescription filled, education)

<table>
<thead>
<tr>
<th>• CAD considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. LDL-C testing and monitoring per guidelines (if not done before clinical visit)</td>
</tr>
<tr>
<td>2. Medication education and compliance (e.g., in-office and community based)</td>
</tr>
<tr>
<td>3. Nutritional education (e.g., HTN and obesity, enrollment, coordinate community resources)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>• HTN considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Medication education and compliance (e.g., in-office and community based)</td>
</tr>
<tr>
<td>2. Nutritional education (e.g., HTN and obesity, enrollment)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>• Ped – Prevention considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Coordinate community resources to achieve measures (e.g., scheduling, education)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>• Ped – Obesity considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Patient and family nutrition education (e.g., enrollment, coordinate community resources)</td>
</tr>
<tr>
<td>2. Follow-up of lab values (per guidelines and Pod preferences – e.g., LDL-C, glucose, HbA1c) leading to appropriate clinical interventions (e.g., medications)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>• Ped – Asthma considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Appropriate medication use</td>
</tr>
<tr>
<td>2. Medication compliance</td>
</tr>
<tr>
<td>3. Medication reconciliation upon ER or hospital discharge</td>
</tr>
<tr>
<td>4. Patient follow-up upon ER or hospital discharge</td>
</tr>
</tbody>
</table>

Table 5

**Care Delivery Monitoring – Longitudinal**

Upon completion of care delivery and follow up of results, patients require longitudinal monitoring to ensure they receive the proper interventions at the required intervals. Examples of such interventions include regular blood pressure testing for patients with hypertension, HbA1c testing at guideline prescribed intervals for diabetics; and regular weigh-ins and review of food diaries of patients struggling with obesity. Such interventions are described in detail in clinical treatment guidelines which can be found later in this document. Table 6 describes some of the consideration presented to each POD in their development of their processes and workflows.

Additionally, during this phase of the program, patients are monitored for continued behavior that should be decreased if the interventions are working properly, such as:
• Frequent preventable hospital admissions
• Frequent use of the hospital Emergency Department
• Poor medication compliance
• Missed lab tests
• Missed appointments
• Lab tests trending in the wrong direction

While the goal is to monitor the patient’s progress towards healthier behavior and better management of their chronic condition, it is necessary to realize that some patients will slide back into their old habits and others will find compliance with their prescribed treatment too difficult. For others who are compliant, the treatment will be deemed ineffective. Therefore, it is important to not only look for progress, but to monitor for problems and concerns so these can be addressed immediately.

In addition, standard, actionable reports are required to monitor the impact of the delivered interventions for each disease so that the program can be modified if deemed to be falling short of targeted outcomes. Physicians and other clinical care providers must be given a summary report of the effectiveness of their interventions in an effort to encourage the continuation of effective practices or the modification of less satisfactory ones. Each POD should develop a communication strategy, including the formulation of required reports, to engage clinical team members in a process of continuous improvement of processes and workflows that can deliver targeted outcomes.

The reporting methodology should be as follows:
• Quality care and evaluation program to be developed
  o Data Collection
    ▪ What types of information to be included?
      • Disease type
      • Intervention(s)
      • Age
      • Clinical results
        o Weight
        o Lab results
      • Medications
      • Subjective assessment
  o Business intelligence tool to be developed
    ▪ Standard actionable reports available on a weekly and monthly basis
    ▪ Ad-hoc reporting capability
- Population Health Management reports
  - Ability to trend changes in overall population based on disease state and intervention approach
  - Identification of protocols that worked vs. those that need enhancement
- Who are reports to be shared with?
  - All PCPs in POD
  - Hospital personnel
  - Specialists in POD
  - Other members of the care coordination team
- Distribution approach for reports
  - All reports to be available via centralized reporting tool – preferably via the web
  - For those individuals not able to access the reporting tool (or if this is not yet in place), reports to be faxed on an periodic basis
    - Timeline for reports to be created

Questions and considerations presented to each POD are outlined below.

1. Describe in detail the processes, including decision points that will be used to monitor patients in an effort to identify those that will require outreach and a “re-entering” of the care delivery cycle.
2. Emphasis should be on the proactive measures that help ensure practices are following targeted disease guidelines in their effort to satisfy agreed to clinical and financial outcome metrics.
   a. This activity helps ensure that patients remain within the disease management road map for each disease.

<table>
<thead>
<tr>
<th>Patient Monitoring – Longitudinal</th>
<th>Monitor patients per guidelines and refer to patient outreach as required</th>
<th>Using guidelines, determine when patients require clinical interventions and engage patient outreach to return them to clinical care flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient registry</td>
<td>Track patients on their continuum of care, proactively referring them to patient outreach to help ensure compliance with disease guidelines.</td>
<td>Emphasis is on proactive interventions that promote continuity of care, preventive services and monitoring and treatment compliance with disease guidelines</td>
</tr>
</tbody>
</table>

- DM considerations Per disease measures
- CAD considerations Per disease measures
- HTN considerations Per disease measures
- Ped – Prevention considerations Per disease measures
- Ped – Obesity considerations Per disease measures
- Ped – Asthma considerations Per disease measures
Technology Support
Due to the variety of electronic health records used by the participating practices, EastPoint Health spent significant time working with participating practices to ensure they were able to meet the electronic prescribing standard as required by pilot participation. According to the requirements, by July 2010, 80% of eligible new prescriptions for patients seen must be written with an electronic prescription writer that is linked to patient-specific demographic and clinical data. Early on, only 22 practices out of 33 participating met the e-prescribing criteria. EastPoint Health worked with each practice and through intensive training and process remediation, as of February 2011, 100% of all participating practices meet electronic prescribing standard.

EPH also assessed technology capabilities of existing practices. Initial assessments found:

- 97% utilized a practice management system (PM)
- 82% utilized an electronic medical record system (EMR)
- 100% of reporting practices had high speed internet access

Of the practices with an EMR, there were varying levels of interface
- 74% had an integrated interface between their PM and EMR
- 44% had an interface for lab results
- 19% had an interface for imaging reports

Based on these initial assessments, significant time and funding was spent during the first few months of the pilot assisting practices implementing and/or learning to appropriate utilize their existing EMRs. Another challenge was the disparity between the participating practitioners’ and associated hospitals’ electronic health record (EHR) capabilities. One of the first steps was to determine which EHR’s and accompanying functionalities were being used within each practice. The chart below provides the breakout of vendors and practices.

<table>
<thead>
<tr>
<th>EHR Vendor</th>
<th># Practices</th>
<th># Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athenahealth</td>
<td>13</td>
<td>97</td>
</tr>
<tr>
<td>Medent</td>
<td>9</td>
<td>28</td>
</tr>
<tr>
<td>GE</td>
<td>6</td>
<td>38</td>
</tr>
<tr>
<td>ECW</td>
<td>6</td>
<td>24</td>
</tr>
<tr>
<td>STI</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Encounter Pro</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Allscripts</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Emdeon (Sage)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>42</strong></td>
<td><strong>206</strong></td>
</tr>
</tbody>
</table>
All practices within Pod 1 (AMC) utilize e-Clinical Works (eCW), while in Pod 2 (HHHN) practices apply Athena Health. As was expected, Pod 3 (CVPH) had the most diversity with practices utilizing Emdeon (Sage), Medent, eCW, Allscripts, GE, STI, and Encounter Pro.

Once a baseline assessment was completed, work was undertaken to assess the level of use of technology and to work with practices to develop corrective actions/remediation where necessary for practice workflows. Special emphasis was given to:

- Ensure practices were enabled for e-prescribing in order to support the PCMH model.
- Encourage providers to apply HIE to order to inform clinical decisions and to communicate with patients, plus to utilize EHR’s to support PCMH.
- Analyze and evaluate practices’ use of EHR’s in providing care to the chronic disease population and to help providers develop corrective action plans where necessary.
- Measure the achievement of quality/performance improvement outcomes and document lessons learned from the PCMH initiative.

Without these assessments and remediation, the quality data and performance reporting goals would not be met and the need for data warehousing would become irrelevant.

At the Pod and AHI level, efforts to ensure standardized data feeds from all were undertaken. Efforts were to enable secure data exchanges between each of the participating practices and hospitals and the Health Information Exchange New York (HIXNY), the regional health exchange serving northern New York. The practices will then have the capability to securely send clinical data to the clinical data warehouse (QDC). Participating health plans will submit administrative claims data, by patient, to a separate payor data warehouse. Information from both the payor and EHR warehouses will ultimately be available to participating practices. Information from both the payor and EHR warehouses will ultimately be integrated at participating practices and Pods and both will provide clinical decision support for population health management as well as the tools necessary for practice level continuous quality improvement. The planned flow of information is visually demonstrated on the following page.
The patient Data Warehouse will include data from the primary care providers’ EHRs augmented by the HIXNY patient record, while the Payor Data Warehouse will contain a holistic view of the patient’s experience from all the providers who have filed claims with the Adirondack Medical Home health plans for the patient. These data warehouses leverage similar web based reporting tools but utilize different, yet complementary information.

Combined, these two warehouses create a more comprehensive view of the patients’ experience that neither warehouse would be able to individually provide. In addition, the Pods were designed to enable practices to leverage the clinical decision informatics now available, including population health management and continuous quality improvement activities. Additionally, the use of the information contained in these data warehouses will facilitate the practices and the Pods ability to improve chronic disease care management, population health improvement and continuous quality improvement, utilizing the “Plan Do Study Act” (PDSA) methodology.
The Quality Data Center is an analytic engine and reporting portal leveraging the primary care practices’ electronic health records (EHR) data from HIXNY. The QDC is a data warehouse that aggregates demographic data (surrogate unique patient ID, DOB and gender) and pertinent structured clinical data elements (Problems/Diagnoses, Procedures, Medications, Allergies, Immunizations, Lab & Radiology Results, vitals and social history) from EHR source systems using HIXNY as the intermediary. Patient consent is obtained at the practice/hospital level using the HIXNY Patient consent form which is provided as Attachment A.

Practice EHR data will be available downstream to the QDC. The data set contains clinically rich information, which is not available in the Payor Data Warehouse. The reporting portal includes tools for quality reporting and condition reporting. Specific tools identify gaps in care, assess provider performance across peers, and monitor progress over time. The use of the information available in the QCD is ultimately to be used to facilitate the improvement of care and support disease management activities.

By leveraging the provider level data available within the QDC practitioners can make evidence based quality of care improvements. Pods can evaluate practitioner’s performance against the standards implemented for the six identified conditions, pinpoint evidence based gaps in care, and identify patients that require more intensive interventions/care management.

The data set within the Payor Data Warehouse contains the broadest view of the patient’s care. The analytic engine and reporting portal will allow for quality reporting, condition tracking, and generation of patient specific care management that highlights evidence based gaps in care.

The Payor Data Warehouse accepts enrollment, claims, and pharmacy data via secure electronic portal. The payor data will be structured and risk adjusted to identify clinical variation and track performance. The ultimate purpose is to facilitate quality of care/disease management activities by providing population level availability of information for “all care available,” including hospital, specialty, ambulatory, and pharmacy expenditures. A key feature will be the ability to identify evidence based gaps in care and identify patients with preventable hospital admissions/re-admissions/ER visits. The data within this data warehouse will also be used to evaluate performance of participating practices within the APCMHP, specifically the ability to save more than the $7 per member per month payment funded by the payors.

Key features include identification of gaps in care inclusive of all claims. Examples identifying gaps in care for Discharge Follow-Up are provided on the following page. Figure 3 demonstrates data provided by provider, Figure 4 demonstrates the same data reported by patient, and Figure 5 illustrates sample identification of financial impact of “gaps in care.”
In addition, the Payor Data Warehouse augments identification of patients with newly acquired chronic diseases as well as those patients with recent clinical deterioration or progression of disease. The Payor Data Warehouse also allows for appropriate assignment into case management by the pods as well as identification of potentially preventable admissions, readmissions and ER visits.

Data from the Payor Data Warehouse will be reported from each participating payor in a number of different permutations. Patient level data will be reported to each provider and to each Pod for the providers assigned to their Pod. They will receive patient level data by payor and aggregate data by disease type across payors. Aggregate only level data will be reported by payor across all Pods and providers. This structure is illustrated in Figure 6 below, where Provider 1 in the Lake George Pod will obtain patient level data for his/her patients by payor and condition. The provider will also be able to compare his performance to de-identified aggregate data from other providers with the Pod and across the Pilot.
Payor Relations

One of the biggest challenges during the first year of the pilot program was establishing trust to allow an effective working relationship between the AHI, Pods, participating practices and participating payors. EPH, along with the governance council, collaborated through monthly meetings to develop a common language, expectations, and pilot goals.

One of the participating payors major concerns was related to the security and use of the patient level data being transmitted to the payor data warehouse. Participating practices assigned to each of the PODs were required to execute a Business Associate Agreement (BAA) for EPH, MAeHC (EMR consultant), and HIXNY (health exchange). The execution of the BAA allows the exchange of patient level claims and clinical data between participating entities. The BAA also ensures all entities are HIPAA compliance and take the necessary precautions to protect patient specific data. The common BAA utilized by each POD is provided as Attachment A.
NCQA Recognition

The 33 primary care provider groups participating in this program were required to commit to obtaining NCQA PCMH certification. Successful completion included:

1) Completion of EPH-developed self-assessment
2) Development of work plans and timeline by Feb 1, 2010
3) e-prescribing 80% of eligible prescriptions using NCQA standards starting in July 2010
4) Submission of NCQA PPC-PCMH Level II by February 28, 2011
5) Participation with the affiliated Pod for disease management/ care coordination, quality improvement, and use/access to fractional portions of PharmD, LCSW, and coordination nurses

Meeting NCQA medical home recognition at Level II or III requires competency in nine standards and allows participating practices to meet the requirements outlined in the Adirondack Medical Home Demonstration Project. These standards are illustrated in the table below:

<table>
<thead>
<tr>
<th>Standard 1: Access and Communication</th>
<th>Pre</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Has written standards for patient access and patient communication</td>
<td>4</td>
</tr>
<tr>
<td>B. Uses data to show it meets NCQA standards for patient access and communication</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard 2: Patient Tracking and Registry Functions</th>
<th>Pre</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Uses data system for basic patient information (mostly non-clinical data)</td>
<td>2</td>
</tr>
<tr>
<td>B. Has clinical data system with clinical data in searchable data fields</td>
<td>3</td>
</tr>
<tr>
<td>C. Uses the clinical data system</td>
<td>3</td>
</tr>
<tr>
<td>D. Uses paper or electronic-based charting tools to organize clinical information</td>
<td>6</td>
</tr>
<tr>
<td>E. Uses data to identify important diagnoses and conditions in practice</td>
<td>4</td>
</tr>
<tr>
<td>F. Consistent lists of patients and categories of services needed (population management)</td>
<td>21</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard 3: Care Management</th>
<th>Pre</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Adopts and implements evidence-based guidelines for three conditions</td>
<td>3</td>
</tr>
<tr>
<td>B. Guarantees reminder about preventive service for patients</td>
<td>4</td>
</tr>
<tr>
<td>C. Uses non-pharmacological management of patient care</td>
<td>3</td>
</tr>
<tr>
<td>D. Coordinates care management, including care plans, assessing progress, addressing barriers</td>
<td>5</td>
</tr>
<tr>
<td>E. Coordinates care follow-up for patients who receive care in inpatient and outpatient facilities</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard 4: Patient Self-Management Support</th>
<th>Pre</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Assesses language preferences and other communication barriers</td>
<td>2</td>
</tr>
<tr>
<td>B. Actively supports patient self-management</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard 5: Electronic Prescribing</th>
<th>Pre</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Uses electronic system to write prescriptions</td>
<td>3</td>
</tr>
<tr>
<td>B. Has prescription write with safety checks</td>
<td>3</td>
</tr>
<tr>
<td>C. Has prescription write with cost checks</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard 6: Test Tracking</th>
<th>Pre</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Tracks tests and identifies abnormal results systematically</td>
<td>7</td>
</tr>
<tr>
<td>B. Uses electronic systems to order and retrieve tests and flag duplicates</td>
<td>6</td>
</tr>
<tr>
<td>C. Uses data to track test results</td>
<td>13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard 7: Referral Tracking</th>
<th>Pre</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Tracks referrals using paper-based or electronic system</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard 8: Performance Reporting and Improvement</th>
<th>Pre</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Measures clinical and/or service performance by physician or practice</td>
<td>3</td>
</tr>
<tr>
<td>B. Survey of patients’ care experience</td>
<td>3</td>
</tr>
<tr>
<td>C. Reports performance across the practice or by physician</td>
<td>3</td>
</tr>
<tr>
<td>D. Sets goals and takes action to improve performance</td>
<td>3</td>
</tr>
<tr>
<td>E. Produces reports using standardized measures</td>
<td>2</td>
</tr>
<tr>
<td>F. Transmits reports with standardized measures electronically to external entities</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard 9: Advanced Electronic Communications</th>
<th>Pre</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Availability of interactive Website</td>
<td>1</td>
</tr>
<tr>
<td>B. Electronic Patient Identification</td>
<td>2</td>
</tr>
<tr>
<td>C. Electronic Case Management Support</td>
<td>1</td>
</tr>
</tbody>
</table>

When examined against the common attributes of high quality healthcare delivery, these standards can be grouped into the following quality improvement and related care improvement concepts. Additionally, there are ten “Must Pass” elements regardless of the level of NCQA Medical Home certification sought. For any practice to obtain Level II or III certification, they must score at least 50% on all ten “Must Pass” elements, which would
provide 21.5 points. For practices striving to achieve Level II certification, they would need to accumulate a minimum of 28.5 additional points from the other standards. For practices wishing to attain Level III, they would need to achieve a minimum of 53.5 additional points. The tables on the following page illustrate the how the elements relate and support the quality domains discussed earlier, as well as the points available in each.

EPH utilized our experience and understanding of this unique region to tailor our previously developed, proprietary tools to solicit information needed in an easy-to-utilize manner. In order to ensure all practices fully understood all elements against which they were being measured, EPH held mandatory training meetings for all participants in December, 2009. In addition to training, each practice was provided passwords and logon to the EPH proprietary website.

Practices were given an initial deadline for completion of their self assessments of January, 2010. In addition, EPH developed a comprehensive information technology assessment document that each practice completed to provide a baseline of their current information technology status. This was especially important in ensuring each practice could meet the requirements necessary for NCQA medical home certification. Practices initially rated themselves very high against the standards. Further investigation by EPH highlighted a need to work with the practices to refine their self assessments to provide an accurate baseline assessment against all elements. This remediation occurred during the months of February and March, 2010.

Each participating practice within all three Pods was required to validate their understanding of the NCQA Medical Home Recognition requirements and confirm their commitment to achieve Level II (or higher) medical home certification within one year of the start of the pilot. This agreement was accepted and filed by the Governance Committee at the State Level. The common attestation form which each participating practice was required to sign and submit is provided as Attachment B.

3. IMPLEMENTATION LESSONS LEARNED

Through hard work and coordinated efforts of all stakeholders, the Adirondack Patient Centered Medical Home Pilot Project is poised to successfully transform the delivery of healthcare services and subsequently the healthcare of the people and providers within the Adirondack region of New York State. During the last twelve to fourteen months, a number of undeniable lessons were learned that could be applied in any region wishing to do the same. Universally applicable lessons learned include:

- Recognizing and managing the significant learning curve
Recognizing and managing the significant time investment
Recognizing and developing the necessary technology

Learning Curve
While the elements required of an NCQA PCMH are relatively easy to read and memorize, the transformation of the delivery of primary care services requires a complete change in every facet of delivery. There is a significant learning curve for all involved stakeholders, from the primary care provider, to the insurance company, to the governmental.

For primary care providers, effectively a new paradigm related to care delivery must be learned and embraced. In traditional delivery model, primary care is paper based, disjointed and unconnected, with every provider functioning autonomously. In PCMHs, care is delivered through effective, integrated care teams leveraging technology to focus on providing the best patient care regardless of site of service. A focus on standardized care through the use of evidence-based guidelines is also a change from established methods. Providers have traditionally provided care based on individual preference and knowledge. Variations in care and the associated outcomes were expected. In the new model required in the pilot program, providers must seek out evidence-based medicine and adhere to definitive care methodologies. The effort and time needed for providers to learn to embrace and work effectively in this new structure should not be underestimated.

The payor community is also required to embrace significant changes in mindset. Historical reimbursement relationships have been based purely on volume. For each patient seen or service provided, the payor would reimburse the provider or hospital an established rate or fee. In the new PCMH environment, payment for value and quality outcomes replaces the traditional fee for service, or volume, structure. Forming relationships with providers to reimburse for healthcare outcomes replaces the previous goal of the payor industry to limit access to care. Working with providers and providing reimbursement for “value added” management and care coordination activities is a significant operating change and takes time for the payor community to modify payment, administrative, and financial models.

Time Investment
As discussed above, all participants have a significant learning curve to overcome to ensure success. Overcoming the historic, legal, financial, operational, and practical barriers on any massive change takes significant time. The overall complexity of the pilot project should not be underestimated and it is important to acknowledge and design a plan to ensure the long term commitment and focus of all stakeholders.

While it is imperative to establish project goals with milestones and deadlines, it should be noted that flexibility is also key. Initial timelines during this project required all practices to
submit the application for NCQA certification by December 2010. However, once the initial assessments were completed and the gaps in technology identified, this submission date was determined unachievable. Flexibility allowed the Governance Committee to grant additional preparation time to February 28, 2011, which resulted in increased first time submission success. Rigid adherence to the initial deadlines might have resulted in practices leaving the pilot project.

Finally, the historically contentious relationship between the necessary stakeholders took a significant time investment to overcome. As an example, most provider organizations and payor organizations are traditionally on opposite sides of the healthcare equation. Transforming this relationship into a collaborative one rather than the competitive required regular, frequent meetings and constant communication clarifying expectations and assumptions as the pilot progressed.

**Technology**

In addition, the lack of nationally standardized technology infrastructure or data exchange elements create complexity that lengthens the time needed establish agreed upon reporting. Stakeholders held monthly meetings over the course of the past year to work together and identify common data elements to be reported by each hospital, each participating practice, each system vendor, and each payor. This was a significant undertaking to reach agreement and identify how to ensure standardization despite the various electronic systems utilized by participating organizations. It was determined that all hospitals will report ADT; lab results; imagining reports; medications; and clinical reports. All data elements will be reported in HL7 format to assist in interoperability. All practices will report a consistent set of data and will do so in C32 content.

Payors agreed to provide patient level detail using administrative claims data for all care regardless of the site of service. This data will be fed into a separate, coexisting database.

The level of interoperability needed from complex, distinct systems for this project is groundbreaking. At the beginning of the project, no one understood the effort and time involved in identifying common measurements or the current lack of interface capability of the EHR and hospital vendors to meet the New York interoperability specifications. Without leveraging information technology, it might be possible to meet the patient improvement goals of this project but it would not be feasible to measure and report clinical or financial performance improvements. Additionally, the level of required data sharing is unusual. A significant amount of time and effort was spent examining how to protect patient health information, obtain appropriate consents, and building the flow of the right level of information to the right participating organization.
4. RECOMMENDATIONS FOR FUTURE STEPS

Fully Leverage Technology
Despite the extensive work completed over the past year to improve and standardize the use of electronic health records, build infrastructure to exchange data, and create data warehouse as repositories of clinical and financial reported data continued focus on utilization and improvement must continue.

Interactive technology is the bedrock for successfully managing health outcomes. It is imperative that practices, hospitals, Pods, and payors continue to use the data out of their systems and create useful information to ensure continuous improvements for the benefit of patients. Information should be used to improve health outcomes through the use of data tracking and trending, accurate stratification of patients, and coordination of care to ensure treatment in the most appropriate setting. Used continuously, these tools have the potential to significantly improve healthcare and significantly reduce costs associated with rendering care.

Failure to fully leverage the time and financial investment in technology will reduce the impact of the pilot project.

Continued Common Vision
As discussed at length, this project has many stakeholders with diametrically opposing financial goals. Payors wish to keep costs low, physicians wish to treat patients as they see fit with limited interference, the State of New York wishes to ensure healthcare is locally available to all citizens, and patients just want to receive coordinated care from someone they trust while someone else pays for it! Aligning stakeholders is only possible through trust in a shared vision. This trust and common purposed was created through facilitated meetings and must be nurtured into the future through constant, open communication that is accurate and transparent. All stakeholders should be included without any groups “boxing out” or marginalizing any other group.

Funding Transitions
A significant transformation during this pilot program is the commitment made by the major payors to provide a per member per month management fee to each participating provider obtaining NCQA PCMH recognition. This is the beginning step to help transition healthcare in the Adirondack area from one based on volume of services provided to one based on the value of services provided. Payors recognize the increased time needed by providers to engage their patients, ensure patient buy-in, and coordinate healthcare – all activities to which no incentive was linked in the old reimbursement model. Payors in this pilot project hope to be financially rewarded by healthier patients who prevent illness and obtain care in the most appropriate,
cost effective setting. Providers are excited that foundational services are now financially valued.

To ensure continued progress, payors and providers will need to continue to work together to monitor financial performance for participating patients against baseline data. While the pilot project will attempt to reduce emergency room visits and avoidable hospitalizations, future considerations could include a shift to a shared savings model providing additional reimbursement for those that significantly improve health outcomes. Accurate, timely monitoring of patient level financial data in conjunction with clinical outcome data is key to ensuring stakeholders remain committed for the duration of the five year pilot and beyond.
This Business Associate Agreement (the “Business Associate Agreement” or the “Agreement”) is made as of the date set forth on the signature page hereof (the “Effective Date”) by and between EastPoint Health LLC, a Kansas limited liability company (“EastPoint”), the Massachusetts eHealth Collaborative, Inc. (“MaeHC”), the Healthcare Information Xchange of New York (“HIXNY”) and the physician practice listed on the signature page hereof (the “Practice”).

All capitalized terms not defined herein shall have the meanings given to them in the Standards for Privacy of Individually Identifiable Health Information under the Health Insurance Portability and Accountability Act of 1996 (hereinafter, the “HIPAA Regulations”) or the Health Information Technology for Economic and Clinical Health Act of 2009 (hereinafter, “HITECH”).

1. PURPOSE
The Practice is participating in the Adirondack Health Care Home Multipayor Demonstration Program (also known as the Adirondack Medical Home Demonstration (AMHD)) (the “Project”). EastPoint and MaeHC (each, a “Business Associate”) will be providing certain services to the Practice in connection with the Project, and in the course of providing those services, will have access to PHI of the Practice.

2. PERMITTED USES AND DISCLOSURES OF PHI

2.1 Permitted Uses and Disclosures by the Business Associates. Except as otherwise specified herein, a Business Associate may make any and all uses and disclosures of PHI necessary to perform its obligations under the Project, provided that such uses or disclosures would not violate the HIPAA Regulations if made by the Practice, which may include disclosure of PHI (i) to its employees, subcontractors and agents, as set forth below, (ii) as directed by the Practice, or (iii) as otherwise permitted by the terms of this Business Associate Agreement. All other uses and disclosures of PHI are prohibited. Unless otherwise limited herein, each Business Associate may use PHI of the Practice for the following purposes:

(a) Disclosure for Management, Administration. The Business Associate may use or disclose PHI for proper management and administration of the Business Associate as set forth in 45 C.F.R. § 164.504(e)(4). The Business Associate shall take appropriate corrective action in the event any of its employees or workforce members uses or discloses PHI in contravention of this Business Associate Agreement.

(b) Disclosure to Third Parties for Performance of Agreement. The Business Associate may use or disclose the PHI in its possession to third parties for the purpose of performing its duties in connection with the Project and under this Business Associate Agreement. The third party shall provide written assurances of its confidential handling of such PHI, which shall include the same restrictions and conditions on use and disclosure as apply to the Business Associate herein.

(c) As Required by Law/Legal Process. The Business Associate may use or disclose PHI to fulfill any present or future legal responsibilities of the Business Associate, provided that the disclosures are (i) required by law, as defined in 45 C.F.R. § 164.103, or (ii) required to carry out the legal responsibilities of the Business Associate, as provided in 45 C.F.R. § 164.504(e)(4)(i)(B).

(d) Aggregation of Data. The Business Associate may aggregate the PHI in its possession with the PHI of other covered entities and provide the Practice with data analyses relating to the Health Care Operations of the Practice in accordance with 45 C.F.R. § 164.504(e)(2)(i)(B). Under no circumstances may the Business Associate disclose PHI of the Practice to any other party or covered entity without the explicit authorization of the Practice.

(e) Use of De-identified Data. The Business Associate may de-identify PHI and utilize de-identified PHI for purposes other than research, provided that the Business Associate (i) de-identifies the PHI pursuant to the HIPAA requirements set out in 45 C.F.R. § 164.514(b) and (ii) provides the Practice with appropriate documentation if required by 45 C.F.R. § 164.514 (b)(1)(ii). De-identified information does not constitute PHI and, with the exception of section 2.1(f) below, is not subject to the terms of this Business Associate Agreement.

(f) Use of Data for Research Purposes. The Business Associate agrees that it will obtain prior approval by the Practice for the use or disclosure of PHI or de-identified PHI for research purposes. Use or disclosure for research purposes that has not been approved by the Practice is strictly prohibited.
3. RESPONSIBILITIES OF THE PARTIES WITH RESPECT TO PHI

3.1 Responsibilities of the Business Associate. With regard to the uses or disclosures of PHI permitted by this Business Associate Agreement, each Business Associate hereby agrees to the following:

(a) Report Unauthorized Use. The Business Associate agrees to report to the Practice any unauthorized use or disclosure of PHI by such Business Associate or its third party agents of which the Business Associate becomes aware, and any remedial action to be taken by the Business Associate with respect to such unauthorized use or disclosure. The Business Associate shall make said report to the designated Privacy Officer of the Practice, in writing, within 5 days of having been made aware of the unauthorized use or disclosure.

(b) Safeguard PHI. The Business Associate agrees to use commercially reasonable efforts to maintain the confidentiality and security of PHI regardless of media (including written, oral, and electronic) and to prevent unauthorized use or disclosure of such PHI by implementing and maintaining appropriate protection policies and procedures.

(c) Mitigate. The Business Associate agrees to mitigate, to the extent possible, any deleterious effects from any unauthorized use or disclosure of PHI by the Business Associate or its third party agents.

(d) Bind Subcontractors and Agents. The Business Associate agrees to require all of its subcontractors and agents that receive, use, or have access to PHI under this Business Associate Agreement to agree, in writing, to adhere to the same restrictions and conditions on the use or disclosure of PHI that apply to the Business Associate pursuant to this Business Associate Agreement.

(e) Minimum Necessary Disclosure. The Business Associate agrees to disclose to its subcontractors, agents, or other third parties, and request from the Practice, only the minimum PHI necessary to perform or fulfill a specific function required or permitted hereunder.

(f) Return or Destroy. Subject to Section 4.3 below, within 30 days of the termination of this Agreement, the Business Associate agrees, if feasible, to return to the Practice or destroy the PHI in its possession and retain no copies (which for purposes of this Agreement shall mean destruction of all backup tapes or other media). If the Business Associate reasonably determines that such return or destruction is not feasible, it shall extend the protections of this Business Associate Agreement to such information and limit further uses and disclosures to those purposes that make the return or destruction of the PHI infeasible.

(g) Implement Safeguards. The Business Associate agrees to implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic PHI that it creates, receives, maintains, or transmits on behalf of the Practice.

(h) Bind Subcontractors and Agents. The Business Associate agrees to require all of its subcontractors and agents to which it provides electronic PHI to agree, in writing, to implement reasonable and appropriate safeguards to protect such PHI.

(i) Report Security Incident. The Business Associate agrees to report to the Practice any security incident involving PHI experienced by the Business Associate or its subcontractors and agents of which the Business Associate becomes aware, and any remedial or other action to be taken by the Business Associate with respect to such incident. The Business Associate shall make said report to the designated Privacy Officer of the Practice, in writing, within 5 days of having been made aware of the security incident.

(j) Access for Viewing, Inspection, and Copying by Individual Subject of PHI. The Business Associate agrees to make PHI maintained by the Business Associate in a Designated Record Set, if any, available to the Practice for subsequent inspection and copying by the Individual subject thereof in accordance with applicable law (including, but not limited to, the HIPAA Regulations, 45 C.F.R. § 164.524).

(k) Amendment by Subject of PHI. Upon 10 days’ written notice by the Practice, Business Associate agrees to make PHI maintained by the Business Associate in a Designated Record Set, if any, available to the Practice for subsequent amendment by the Individual subject thereof and incorporate any amendments to PHI in accordance with applicable law (including, but not limited to, the HIPAA Regulations, 45 C.F.R. § 164.526). The Business Associate shall create a process to permit and document such amendments.

(l) Access by the U.S. Department of Health and Human Services (HHS). Subject to attorney-client and any other applicable legal privileges, and pursuant to 45 C.F.R. § 164.504(e)(2) (iii)(H), the Business Associate agrees to make available to the Secretary of
HHS all records, books, agreements, policies, and procedures relating to the use or disclosure of PHI so that HHS may determine the Practice’s compliance with the HIPAA Regulations. The Business Associate shall immediately notify the Practice upon receipt of any request for access by HHS and shall provide the Practice with a copy of the HHS request for access and all materials to be disclosed pursuant thereto.

(m) Access for Accounting Purposes. The Business Associate agrees to document such disclosures of PHI and information related to such disclosures as would be required for the Practice to respond to a request by an Individual for an accounting of disclosures of PHI. The Business Associate agrees to provide to the Practice, within 10 days of receiving a request in writing therefrom, such information as is requested by the Practice to permit the Practice to respond to a request by an Individual for an accounting of the disclosures of the Individual’s PHI in accordance with 45 C.F.R. § 164.528.

(n) Notification of Breach. The Business Associate shall notify the Practice of any Breach involving Unsecured Protected Health Information maintained, used or disclosed by the Business Associate on the Practice’s behalf without unreasonable delay but in no event more than fourteen (14) days after the Business Associate’s discovery of the Breach. The Business Associate’s notification to the Practice shall include the identity of each individual whose Unsecured Protected Health Information has been, or is reasonably believed to have been accessed, acquired or disclosed in connection with the Breach, and, if known, the specific data elements disclosed for each individual. The Business Associate shall reasonably cooperate with the Practice in investigating and mitigating the harmful effects of any Breach. The Business Associate shall assume responsibility for preparing and sending Breach notification letters to individuals without unreasonable delay but in no event more than sixty (60) days after the Business Associate’s discovery of the Breach; provided, however, that the content of any notification shall be subject to the prior written approval of the Practice.

(o) Acknowledgement of Application of HITECH. The Business Associate acknowledges and agrees that the requirements of HITECH that relate to privacy or security are applicable to the Business Associate in the same manner that such requirements are applicable to the Practice. All such requirements are incorporated by reference into this Business Associate Agreement.

3.2 Responsibilities of the Practice. With regard to the use or disclosure of PHI by a Business Associate, the Practice hereby agrees as follows:

(a) Inform the Business Associate of Changes in Privacy Notice. Upon request, the Practice agrees to furnish the Business Associate with a copy of the Notice of Privacy Practices that the Practice provides to Individuals pursuant to 45 C.F.R. § 164.520 and to inform the Business Associate of any subsequent changes thereto, if such changes affect the Business Associate’s permitted or required uses and disclosures of PHI.

(b) Inform the Business Associate of Changes in Authorizations. The Practice agrees to inform the Business Associate of any changes in, or withdrawal of, any authorizations provided to the Practice by Individuals in accordance with 45 C.F.R. § 164.508 and pursuant to which the Practice has disclosed PHI to the Business Associate, if such changes affect the Business Associate’s permitted or required uses and disclosures of PHI.

(c) Inform the Business Associate of Opt-out Election. The Practice agrees to inform the Business Associate of any opt-outs exercised by any Individual from marketing or fundraising activities of the Practice pursuant to 45 C.F.R. § 164.514(f), if such opt-outs affect the Business Associate’s permitted or required uses or disclosures of PHI.

(d) Notify the Business Associate of Additional Limitations. The Practice agrees to notify the Business Associate, in writing and in a timely manner, of any arrangements permitted or required of the Practice under 45 C.F.R. parts 160 and 164 that may affect in any manner the use or disclosure of PHI by the Business Associate under this Business Associate Agreement, including, but not limited to, restrictions on use or disclosure of PHI agreed to by the Practice as provided for in 45 C.F.R. § 164.522.

4. TERM AND TERMINATION

4.1 Term. This Agreement shall become effective on the Effective Date and shall continue in effect until all obligations of the Parties have been met, unless terminated as provided in this Section 4. In addition, the provisions and requirements of Section 4.3 and Section 3.1 (solely with respect to PHI the Business Associate retains in accordance with Section 4.3) of this Agreement shall survive its expiration or other termination.

4.2 Termination by the Practice. Each Business Associate hereby acknowledges and agrees that in the event the Practice receives a complaint that includes, or the Practice otherwise has or obtains, substantial and credible evidence that such Business Associate has violated a material term of this Business Associate Agreement, the Practice shall have the right to
investigate such violation, and the Business Associate shall cooperate fully with the Practice with respect to such investigation. As provided for under 45 C.F.R. §§ 164.314(a)(2)(i)(D) & 164.504(e)(2)(iii), the Practice may immediately terminate this Business Associate Agreement with respect to a Business Associate, and terminate such Business Associate’s access to PHI of the Practice, without penalty or recourse to the Practice if the Practice reasonably determines that the Business Associate has breached a material term of this Business Associate Agreement. Alternatively, the Practice may choose to: (i) provide the Business Associate with written notice of the existence of a material breach; and (ii) afford the Business Associate an opportunity to cure said material breach, to the satisfaction of the Practice, within 30 days of receipt of the Practice’s written notice. Failure to cure is grounds for the immediate termination of this Business Associate Agreement with respect to such Business Associate. Each Business Associate further acknowledges that where the Practice determines in its reasonable discretion that such Business Associate has violated any material term of this Business Associate Agreement and that it is not feasible to terminate this Business Associate Agreement, the Practice will report such violation to HHS and to any other governmental agency as may be required by applicable law. Termination of this Business Associate Agreement by the Practice under either alternative shall be in writing. Notwithstanding termination of this Business Associate Agreement with respect to one of the Business Associates, this Business Associate Agreement shall remain in effect with respect to the other Business Associate unless and until the Practice expressly terminates this Agreement with respect to such other Business Associate as well.

4.3 Effect of Termination. Upon the event of termination of this Agreement with respect to a Business Associate pursuant to this Section 4, such Business Associate agrees to return or destroy all PHI pursuant to 45 C.F.R. § 164.504(e)(2)(iii), if it is feasible to do so. Prior to doing so, the Business Associate further agrees to recover any PHI in the possession of its subcontractors or agents. If it is not feasible for the Business Associate to return or destroy said PHI, the Business Associate will notify the Practice in writing within 10 days of the termination of this Business Associate Agreement. Said notification shall include: (i) a statement that the Business Associate has determined that it is not feasible to return or destroy the PHI in its possession, and (ii) the specific reasons for such determination. The Business Associate further agrees to extend any and all protections, limitations, and restrictions contained in this Agreement to the Business Associate’s use or disclosure of PHI retained after the termination of this Agreement, and to limit any further uses or disclosures to the purposes that make the return or destruction of the PHI infeasible. If it is not feasible for the Business Associate to obtain from subcontractors or agents any PHI in the possession of subcontractors or agents, the Business Associate shall provide a written explanation to the Practice and require subcontractors and agents to agree to extend any and all protections, limitations, and restrictions contained in this Business Associate Agreement to subcontractors’ or agents’ use or disclosure of PHI retained after termination of this Business Associate Agreement, and to limit any further uses or disclosures to the purposes that make return or destruction of the PHI infeasible.

5. MISCELLANEOUS

5.1 Successors and Assigns. The terms and conditions of this Business Associate Agreement shall inure to the benefit of and be binding upon the respective successors and assigns of the parties, provided that this Agreement may not be assigned by either party without the prior written consent of the other. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and assigns any rights, remedies, obligations, or liabilities under or by reason of this Agreement.

5.2 Severability. If one or more provisions of this Agreement are held to be unenforceable under applicable law, the parties agree to renegotiate such provision(s) in good faith. In the event that the parties cannot reach a mutually agreeable and enforceable replacement for such provision, then (a) such provision shall be excluded from this Agreement, (b) the balance of the Agreement shall be interpreted as if such provision were so excluded and (c) the balance of the Agreement shall be enforceable in accordance with its terms.

5.3 Amendment and Waiver. Any term of this Agreement may be amended only with the written consent of the parties. Any amendment or waiver effected in accordance with this Section shall be binding upon the parties and their respective successors and assigns. Failure to enforce any provision of this Agreement by a party shall not constitute a waiver of any term hereof by such party. If HIPAA, the HIPAA Regulations or HITECH are amended or interpreted in any manner that renders this Agreement inconsistent therewith, the Practice may, on thirty (30) days written notice to the Business Associates, amend this Agreement to the extent necessary to comply with such amendments or interpretations.

5.4 Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original and all of which together shall constitute one instrument.
5.5 Entire Agreement. This Agreement is the product of both of the parties hereto, and constitutes the entire agreement between such parties pertaining to the subject matter hereof, and merges all prior negotiations and drafts of the parties with regard to the transactions contemplated herein. Any and all other written or oral agreements existing between the parties hereto regarding such transactions are expressly canceled.

5.6 Notice. All requests, reports, approvals and notices required or permitted to be given under this Agreement shall be in writing and, unless specifically provided otherwise in this Agreement, shall be deemed to have been given when sent if personally delivered, faxed (with receipt confirmed) or mailed by registered or certified air mail, return receipt requested, or by overnight mail with receipt confirmed), postage prepaid, to the party concerned, at its address or addresses as set forth on the signature page hereof or as designated from time to time by notice in writing.

The parties have executed this Business Associate Agreement as of the date first above written.

EastPoint Health, LLC
P.O. Box 25506
Overland Park, Kansas 66221
Name: Dennis Weaver, Chief Executive Officer

Massachusetts eHealth Collaborative, Inc.
860 Winter Street
Waltham, MA 02451
Name: Micky Tripathi, Chief Executive Officer

Healthcare Information Xchange of New York
855 State Route 146
Clifton Park, NY, 12065
Name: Dominick Bizzarro, Chief Executive Officer
ATTESTATION STATEMENT

Practice Name:____________________________________

Practice Address:__________________________________

Practice City:_____________________________________

Practice State:______________________  ZIP:__________

I certify that I have reviewed each NCQA Medical Home Recognition requirements in the attached document, and attest that (practice name)

__________________________________________________________________________

is working toward compliance with the applicable requirements.

Signature:__________________________________________

Printed Name:______________________________________

Title:______________________________________________

Date:______________________________________________