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## **Advanced Practice Care Model in a Midwestern Allergy Clinic**

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ADVANCED PRACTICE CARE MODEL IN A MIDWESTERN ALLERGY CLINIC

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Submitted in partial fulfillment of the  
requirements for the degree of  
Master of Arts in Nursing

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2014



## CARE MODEL

## Abstract

Health care organizations are creating innovative patient care models to deal with the rapidly changing healthcare environment. Implementation of the Affordable Care Act has led to reduced revenue for healthcare organizations and placed an impetus on quality. For healthcare providers to continue to practice, they must change their model of care. An allergy clinic in a large Midwestern healthcare organization created a care model which capitalizes on the unique skillset that nurses possess. Nurses in the care model contact the patient before their visit, assess patient needs, and follow-up with the patient in a post-consult nurse visit. The care model has shown great promise in reducing the itinerary length of patients as well as decreasing the need for physicians to order additional tests and consults as part of the visit. The care model is an example of nurses expanding their scope while practicing at the fullest extent of their licensure.

*Keywords: care model, nurse, scope*

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## CARE MODEL

### Advanced Practice Care Model in a Midwest Allergy Clinic

#### Chapter 1: Introduction

Patient satisfaction is vital to the survival of health care providers as health care delivery systems evolve (Prindahl, Sorenson, Horn, Petersen, & Horslev-Petersen, 2014). In a small allergy practice in an upper Midwest medical facility, patients have not had return appointments scheduled due to external forces on the institution. Without return appointments, patients are unable to receive valuable information and test results, nor an opportunity to ask questions. This has increased the amount of follow-up calls to the allergy clinic by patients who have not had satisfactory answers to their questions (G.I, personal communication November 15, 2013). Changing the visit model to have nurses working collaboratively with their physician colleagues to manage patient visits would lead to better patient outcomes and satisfaction. This change could improve the outcomes for asthma and allergy patients in the Midwest allergy practice. Benner's (1982) Novice to Expert Theory will be used as a theoretical framework as nurses move along the continuum of novice to expert while providing this new care model to patients. Consequently, changing the nursing practice model could: increase patient satisfaction as well as health care worker satisfaction, decrease itinerary length, and reduce the necessity of follow-up non-visit care.

#### **Background of the Project**

Currently, the allergy practice in this upper Midwest healthcare institution consists of 3 registered nurses working in collaboration with 10 physicians. The allergy practice cares for an average of 900 patients per month with 60 visits per month in the chronic rhinosinusitis clinic (G. I., personal communication November 15, 2013). The current patient visit begins with a referral to the allergy clinic. Often, the patient will arrive at the

clinic with little or no information, especially if he or she is a new external patient to the clinic. External patients are those individuals who were not referred by another department within the medical institution. Much of the physician visit time is used to gather patient history information and discuss next steps. In many cases, but particularly with the chronic rhinosinusitis (CRS) patients, the next steps involve allergy testing, computed tomography scans, rhinoscopy, spirometry, and olfactory testing (M. P., personal communication, October 2, 2013). A patient would be scheduled for these tests and then leave the clinic without receiving the test results or the plan of care from the physician. Instead, the test results and impression/report/plan are communicated to the patient via a letter, nurse phone call, or electronic communication portal.

Communication in letter or electronic form often leads to patients calling the clinic and asking questions of the nurses. The nurses may or may not have the answers readily available. When nurses in the clinic receive questions they cannot answer, an electronic message is generated to the physician with the patient's question. The physician then replies to the nurse who subsequently returns a call to the patient with the answer to their question. Currently, the goal is to have a 48-hour response back from the physician, but some responses have been as slow as 90 days (G I., personal communication November 15, 2013). The current process has led to low patient satisfaction scores along with frustration for nursing and other providers (K. K-O., personal communication, December 12, 2013).

The nursing practice model change is a potential solution for both nurses and patients as external forces on the institution alter the way in which care is delivered. With health care reform in the United States, the Affordable Care Act (ACA) passed into law in 2009,

and implemented in 2014, the allergy clinic providers have experienced decreased revenue (M. P., personal communication, October 2, 2013). For providers to stay competitive in the new insurance marketplace, they must see new external patients. New patient consults are paid at a much higher rate than existing patient reimbursements. These rates are set by the Centers for Medicare and Medicaid services (CMS) and are not negotiable. Thus, patient appointment slots are limited for return visits.

Along with decreasing re-imbursements, a doctor shortage is looming on the horizon (Prindahl, Sorenson, Horn, Petersen, & Horslev-Petersen, 2014). This shortage comes at a time when the ACA estimates an increase of 30 million people will be gaining insurance coverage for the first time in their lives. The shortage of doctors coupled with an increase in the demand for their services by a population that has neglected their health would suggest a need for an alternative way for people to have their health needs met.

In 2010, the Institute of Medicine (IOM) published a landmark paper on the future of nursing (Robert Wood Johnson Foundation, 2010). One of the tenants of this report is the imperative that nurses are practicing to the fullest extent of their licensure. Nurses seeing patients and meeting their needs without the intervention of a physician is within the scope of a registered nurse, but expands upon what nurses' roles have traditionally been. When nurses are provided the right tools with the right set of patients, they can provide better outcomes than many of their physician colleagues (Prindahl et al., 2014). This demonstrates the quality care and improved outcomes nurses can provide when working in collaboration with a physician. This increases the autonomy of nursing while providing for an improved patient experience.

### **Significance of the Project**

Nurses practicing in innovative and new ways at the fullest extent of their licensure would have significant impact on the future of health care in the United States. Health care is extremely expensive, especially if a person does not have health insurance. Nurses do not require the same reimbursement a physician does, thus bringing down the cost of care (Prindahl et al., 2014). Doctors are becoming more specialized, often with general practitioners taking on the role of referral specialists (Prindahl et al., 2014). Preventative care and care for chronic conditions are easily overlooked when so much of patient care is provided by a specialist focused on one disease or body system (Prindahl et al., 2014). Nurses are adept at putting the patient's needs first. Regardless of the initial presenting problem, nurses can provide a holistic approach to the patient's needs (Prindahl et al., 2014). Through the skill and knowledge of nurses, an advanced practice care model will work towards making care more affordable.

The ACA attempts to insure every citizen has medical coverage through public exchanges or government-funded programs. Gains in insurance enrollment have been possible through increasing the eligibility for Medicaid with many of the newly covered over the next few years insured through the government-funded program (Sommers, Kenney, & Epstein, 2014). At the same time, many clinics and hospitals throughout the country are refusing to take on any further government-pay patients. This creates a situation where people may have insurance for the first time in their lives, but be unable to find a facility that will accept their insurance. Health care providers can bring down their costs and subsequently be able to afford the lower reimbursement provided by Medicaid if a portion of their patients were seen only by nurses. The nurse visit care

model would allow those who need specialist care to be seen by specialists whereas chronic and preventative health care can be practiced by nurses. The knowledge gained by the nurse visit care model will demonstrate how nurses can be effective care managers for those who may not otherwise be accepted into specialty care. Cost reduction would also benefit the small portion of people who are not eligible for subsidies under the ACA, but instead are paying for care out of pocket. This group includes illegal immigrants and migrant workers who are ineligible for health care subsidies but still require care while they are in the United States (Sommers et al., 2014).

### **Theoretical Foundation**

Benner (1982) described how nurses move through a continuum during their career becoming experts as they gain knowledge and skills. The Dreyfus(1980) novice to expert model describes moving through phases of competence on a scale of novice to expert. Benner described how the Dreyfus model could be applied to nursing. Nurses start as beginners and adhere to rules and guidelines without having the knowledge and expertise to critically think during situations to alter their practice from the rigid rules (Benner, 1982). The next phase that nurses move into is the advanced beginner stage. The advanced beginner is able to think critically in limited situations, but sees all tasks as having equal importance (Benner, 1982). The third stage described is that of competence. This stage is marked by an ability to prioritize tasks, pre-plan, and the ability to critically think about most situations (Benner, 1982). The fourth stage, or proficiency, is evidenced by a holistic view of the situation (Benner, 1982). In this stage a nurse is able to critically think in any situation while realizing future consequences and actions (Benner, 1982). The final stage is that of expert (Benner, 1982). When nurses reach the

expert stage, they transcend the need for guidelines and rules because they have a deep understanding of each situation (Benner, 1982).

As the small allergy practice in the Midwest adopts the nurse care model, the nurses involved will each experience Benner's (1982) stages of competence. It is necessary for nurses to go through these stages while seeing patients in a clinical setting, informing the patient of clinical diagnoses, plan of care, and sharing tests results. These processes are new for nurses. Nurses in the allergy practice have in-depth knowledge of disease processes associated with immunological diseases. So, a difficult task for the nurses in the allergy clinic is to become adept at answering questions fully and completely for patients while not overstepping their scope of practice.

Approaching the goal that each nurse will become an expert in the nurse visit care model requires tools and education not readily available, which could prolong moving along the continuum of becoming experts for many nurses. Guidelines, education, and protocol development need to run concurrently with the initiation of the practice model change. Physician interaction and partnership are also key for the transition to work smoothly.

The way healthcare is delivered is changing rapidly. The changed landscape of legislation and regulation after the passing of the ACA necessitated a paradigm shift (Sommers et al., 2014). Creation of a new nursing practice model helps manage the care of patients while deploying specialty resources to the patients who need them most. Nurses working in the allergy clinic will move through Benner's (1982) stages of competence as they learn how to conduct patient visits and consultations differently. Tools and education are key to assist the nurses to move through the stages of

competence more quickly. While change is difficult, there is much exciting work being done throughout the country that capitalizes on the strength and knowledge of nurses to provide patients with better healthcare. A literature review in chapter 2 provides support for the proposed nursing practice model.

## Chapter 2: Literature Review

Many innovative concepts are brought forth through a team care model. Having nurses assess the patient pre-visit along with a nurse-only visit for care review are innovative and new concepts not part of standard nursing care. The overriding principal of the care model is capitalizing on nursing knowledge and experience to provide patients the information they need to return home to self-care successfully. Nurses who practice to the fullest extent of their license can benefit patients in both care and cost. Literature reviewing the ability of nurses to practice independently through guidelines and protocols is in the infancy stage. The nurse-led practice model has shown potential to demonstrate a measurable benefit to patients. The benefit to patients is not only better outcomes and patient satisfaction, but also a decrease in cost.

### **Nurses Practicing to the Fullest Extent of Their Licensure**

The Robert Wood Johnson Foundation (2010) partnered with the IOM to make recommendations for the future of nursing. Four key areas were noted and recommendations made. The first area was for nurses to be practicing to the fullest extent of their education and training (Robert Wood Johnson Foundation, 2010). With the ACA's passage through Congress representing the largest overhaul of the nation's medical delivery system since 1965, it is clear that nurses are key to providing better care to more people at a lower cost. Although numbering nearly 3 million as a workforce, relatively few registered nurses are advanced practice registered nurses (APRN) (Robert Wood Johnson Foundation, 2010). APRN's also do not have a standardized regulatory body across the nation, instead they are governed by each state's practice act. This has led to a wide variety of practice models (Robert Wood Johnson Foundation, 2010). One

of these models is chronic disease clinics run by Registered Nurses (RN) with the use of standard protocols and procedures.

### **Nurse Led Clinics**

The lack of standardization noted in the state practice acts has led to innovative ways to use nurses in clinics and for patient care. Prindahl et al. (2014) published a study using RN's as a primary practitioner. Outcomes were measured in three separate groups of patients with chronic rheumatoid arthritis: those who saw a rheumatologist, those who saw the rheumatologist in a group setting, and those who were provided a nurse only consultation (Prindahl et al., 2014). After following the patients for 2 years, the patients in the nurse only visit group proved to have less progression of disease process, greater satisfaction, and greater efficacy in self-care (Prindahl et al., 2014). The ability of nurses to be the primary care consultant with a group of chronic rheumatoid arthritis patients and have improved outcomes compared to their rheumatologist colleagues is promising.

Hegney, Patterson, Eley, Mahomed, and Young (2013) looked at the ability to sustain a RN led clinic model in patients with type II diabetes, hypertension, and ischemic heart disease. The data examined common themes identified from semi-structured interviews with patients and the health-care team (Hegney et al., 2013). The themes that were uncovered were those of patients' confidence in self-management, nursing job satisfaction, the ability of patients to choose between seeing a doctor or a nurse, and the importance of communication among the care providers (Hegney et al., 2013). Other than statistical outcome data in the study, one of the most important themes was nursing job satisfaction and retention. Although an international study, it suggested a link between nurses practicing at the fullest extent of their license as the Robert Wood

Johnson Foundation (2010) recommends and nurses satisfaction with their jobs (Hegney et al., 2013).

One of the largest studies showing the efficacy of nurses working to the full extent of their licensure was undertaken by Hendriks et al. (2012). This study chose atrial fibrillation (AF) management because adherence to recommended regimen is often inadequate (Hendriks et al., 2012). The randomized trial consisted of 712 patient assigned to the nurse-led care group and the control group (Hendriks et al., 2012). The endpoint for the study was either cardiac hospitalization or death with a minimum of 12 months surveillance (Hendriks et al., 2012). Nurses used electronic guidelines and protocols along with being supervised by a single cardiologist to care for the patients with AF (Hendriks et al., 2012). Empirically gleaned information included nurses superior adherence to best practice guidelines (Hendriks et al., 2012). Cardiac hospitalization was seen with 13.5% of the nurse-led group compared to 19.1% of the normal care group; cardiovascular death occurred in 1.1% of the nurse-led group compared to 3.9% of the control care subjects (Hendriks et al., 2012). The evidence of the study led Hendriks et al. to conclude that in terms of cardiac hospitalization and cardiac death, the nurse-led care model was superior to the normal model of care.

A randomized control trial was undertaken by Kuethe, Vaessen-Verberne, Mulder, Bindels, and Van Aalderen (2011) to determine if there was a difference in outcomes over a 2-year period for patients with stable asthma seeing a general practitioner or pediatrician versus care provided by an asthma nurse. Physically, there were no differences in disease management when measuring the normal indicators of forced expiratory volume, school absences, medication changes, and the asthma control test

(Kuethe et al., 2011). There was also no differences in unplanned visits and the nurses rarely needed consultation with a physician, however, the nurse-led group did have an increase in planned review visits (Kuethe et al., 2011). The findings led Kuethe et al. (2011) to conclude that care by an asthma nurse in patients with stable asthma was equivalent to the care provided by a physician or pediatrician.

One of the tenants of the nursing model is that of the pre-visit phone call assessment. The pre-assessment helps to streamline appointments and save time for the physician. The physician no longer has to take the detailed history or do a complete physical assessment. Harris and Watson (2005) described how a nurse-led pre-assessment has benefits to the patient and the staff of a cardiac surgery center. Nurses were trained in gathering baseline data such as CT scans and electrocardiograms, performing a baseline physical assessment, and obtaining pertinent history (Harris & Watson, 2005). The nurses were allowed to follow the cardiac surgeons as they undertook the same process of physical examination and patient data gathering in order to learn the current practice (Harris & Watson, 2005). Nurses also explained the procedure, side effects, and benefits to the patient while allowing time for patient questions (Harris & Watson, 2005). After the pre-assessment was completed, the nurses and physician would discuss the findings before the physician visit (Harris & Watson, 2005). Patients were surveyed with questions in four categories: waiting time, quality of the relationship with the nurse, competence of the nurse, and appropriateness of the information given (Harris & Watson, 2005). Harris and Watson (2005) found that 100% of patients either agreed or strongly agreed that a nurses' pre-assessment was a positive experience. Surveys revealed 90% of patients agreed or strongly agreed that they were given accurate information about their

procedure by the pre-assessment nurse (Harris & Watson, 2005). Staff satisfaction was also measured in this study. Nursing and physician staff perceived that patients were seen more timely, were better informed, and were more prepared to have their cardiac procedure (Harris & Watson, 2005). The concern with the study was the amount of time nurses spent doing the pre-assessment process (Harris & Watson, 2005). This concern is valid as the nursing care model does shift workload from the physician group to the nurses.

Studies showing equivalent or superior care for patients with chronic disease who are managed by nurses only, are encouraging. Although the nursing care model in the allergy clinic is not solely nurse led, pre-assessment and management of the disease post-physician visit is the responsibility of the nurse, thus requiring nurses to practice to the full extent of their license.

### **Cost Savings**

The cost of health care has risen significantly over the past decade and indications are that it will continue to rise (Prindahl et al, 2014). One area that the care model has the ability to influence is the cost of care to patients. Nursing care is assumed to be more cost-effective than physician care because the large discrepancy in both salaries between the two disciplines and the charges that are reimbursed for each discipline. There is small amount of literature describing the cost difference.

Cost effective competent care provided by nurses would be a driver of nurses practicing to the fullest extent of their licensure. Arts, Landewe-Cleuren, Schaper, and Vrijhoef (2012) followed patients for 2 years after dividing them into a usual care and a nurse-led care group. The nurse-led care group allowed nurses to practice through

developed guidelines and protocols (Arts, Landewe-Cleuren, Schaper, & Vrijhoef, 2012). Although looking mainly for cost savings, they found no substantial difference in outcomes between the two groups clinically (Arts, Landewe-Cleuren, Schaper, & Vrijhoef, 2012). The interesting finding from Arts et al.'s (2012) study was that when looking at the results, the nurse-led group did not show a significantly different cost structure than the physician group. When taking the data further, Arts et al. (2012) looked at a metric of cost versus quality adjusted life years (QALY) and found that although gross costs were relatively equivalent for the control and variable groups, the nurse-led group provided significantly less cost per QALY than their physician counterparts. This suggests that even if cost structures are similar, the nurse led group provided more quality life years at a lower cost than the control group.

In looking at RN led models, one of the issues to examine is what population of patients would be best served by nurses unique knowledge and skills. Raftery, Yao, Murchie, Campbell, and Ritchie (2005) conducted a randomized control study of over 1300 patients divided into a control group who used the traditional physician model and RN led intervention group. Although the intention was to look at the gross costs between the groups, the conclusion did not bear out significant differences in gross cost (Raftery et al., 2005). When the information is further broken down, there is some financial benefit to having nurse-led care for those patients whose disease is chronic and stable in nature (Raftery et al., 2005). The oldest, sickest, and those with the most advanced disease progression did not benefit from the intervention model, suggesting the greatest cost savings are with the chronic stable patients (Raftery et al., 2005). A serendipitous

finding of the study was 28 fewer deaths in the intervention group, leading again to more cost effective QALY for those in the nurse-led group.

Much of the literature revealed some serendipitous findings when looking at cost and healthcare utilization. Much of the literature studies begin as a cost saving measurement, but found other benefits to a nurse-led care model. Kamps et al. (2004) measured resources for a control group being cared for by pediatricians and a variable group followed by nurses utilizing guidelines and protocols (Kamps et al., 2004). Average length of an appointment for the pediatrician group was 14 minutes versus 41 minutes for the nurse-led group (Kamps et al., 2004). Although it appears that a greater amount of healthcare utilization is taking place with the nurse-led group, when juxtaposed to the number of outpatient visits, the nurse-led group had a 17.5 percent reduction (Kamps et al., 2004), which suggests that although nurses are spending more time with the patients than their pediatrician counterparts, the nurse-led patients require fewer return office appointments throughout the year (Kamps et al., 2004). Suggestions for the discrepancy include nurses more thoroughly explaining the disease process and patients comfort in asking questions to nursing staff (Kamps et al., 2004). With the reduction in outpatient visits, Kamps et al. (2004) discovered an overall cost reduction of 7.2% in favor of the nurse-led group.

Much of the literature is suggestive of RN led clinics having a significant cost savings when QALY is measured. This also suggests that the stable chronic disease patient is where the most cost-effectiveness can be gained by having nurses provide care independently. Nurses practicing to the fullest extent of their education and experience

has shown promise in the areas of health outcomes and cost-containment. The third metric to be explored in order for nurse-led care to be accepted is patient satisfaction.

### **Patient Satisfaction**

Satisfaction by a population who is conditioned to see a physician for care is ultimately the metric that will prove nurses practicing to the fullest extent of their licensure will be accepted. Patients must have a level of comfort with nurses in order to trust that they are being treated with the best regimen for their condition. They must not only trust the nurse in the patient-provider relationship, but they must trust that nurses have the knowledge and critical thinking skills to provide the right care. Patient satisfaction especially in the realm of chronic disease management or follow-up care is vital because patients who are more satisfied are much more likely to follow recommendations (McIntosh, Fide, & Fowler, 2011). So ultimately, patient satisfaction is an important distinction when looking at patient outcomes.

McIntosh et al. (2011) looked at follow-up care in a breast cancer clinic to see if nurses could provide adequate long-term care to patients. In looking at patient satisfaction, a questionnaire with a Likert scale was used to determine the patient's level of satisfaction (McIntosh, Fide, & Fowler, 2011). While the study lacked a comparison to the standard of care with physicians, it did suggest a high level of satisfaction with nurses providing follow-up care to breast cancer patients (McIntosh, Fide, & Fowler, 2011). Overall, patients agreed or strongly agreed 84-97% of the time that their needs were met by the nurse-led follow-up (McIntosh et al.,2011). Even without the supporting data of a control group, the satisfaction numbers were such that the evidence of follow-up by nurses was enough to consider the trial a success.

Shaida et al. (2007) showed how a nurse-run telephone follow-up can be satisfactory to patients. Shaida et al. (2007) used three different groups: the first was the standard physician visit for follow-up, the second group received a nurse telephone call prior to their follow-up appointment with the physician, and the third received only telephone consultation from a nurse (Shaida et al., 2007). The study measured four different categories: overall satisfaction, professionalism of care, the depth of the provider-patient relationship, and the perceived time involved in the follow-up (Shaida et al., 2007). The survey results demonstrated no differences in overall satisfaction or in the professionalism of care (Shaida et al., 2007). The statistically differing areas were that of perceived time of follow-up and depth of relationship with the provider (Shaida et al., 2007). The nurse-run group had equal satisfaction, but a significant decrease in the time of follow-up whereas the depth of relationship appeared to decline with the group who received care via telephone only (Shaida et al., 2007). This level of satisfaction with nurses providing care is encouraging that patients are accepting and satisfied with nurse-run care. With Shaida et al. (2007) including primarily telephone consultation along with the nurse-led group, there is a suggestion that the lack of depth in the provider-patient relationship would not be there had the patients been consulted in a traditional appointment.

Evidence suggests that nurses can and should take a greater role in managing patient care, especially in chronic, stable patients. Through the use of nursing protocols and guidelines tools are available for nurses to competently manage patients. These tools allow for nurses to practice to the fullest extent of their licensure and education. In chapter 3 the nursing care model and process of implementation will be described.

### Chapter 3: Development of the Practice Model

The genesis of the advanced practice nursing model implemented in the upper Midwest allergy clinic was the need for efficiency, but also the desire to provide better service to patients. The current state of practice before 2014 was the traditional care model the allergy clinic had been practicing for decades. This care model presented many issues for both patients and staff. A patient would make an appointment to see an allergist through the patient appointment office. The patient appointment coordinators would schedule the patient with different doctors dependent on a simple symptom algorithm based on the major complaint of the patient. Appointments would then be scheduled with the physician who specialized in the major complaint. Many times the provider's schedules were booked for months in advance, so patients would have to wait for an appointment. When the appointment day came, patients would have a visit with the provider that included a physical exam, history, and current symptomology. Providers would then order testing or further specialty consultation depending on their findings. Many times scheduling for testing and further consults was not able to occur for several weeks or months depending on how far out physician's appointment calendars were booked (M. P., personal communication, January 13, 2014). Often the lack of a timely return visit led patients to call the allergy nurses asking questions regarding test results and diagnosis that the nurses were not able to answer. The failure to provide an answer to the patient's medical problem in a timely fashion led to poor patient satisfaction and frustration among the providers and nurses.

I became the ambulatory nurse supervisor of the allergy clinic in the summer of 2013. The patient experience was one issue I was tasked with addressing immediately. A

partnership with the providers was formed to determine if standardization of treatment, nursing assessment prior to the visit, and a nurse-only visit to complete the itinerary could provide for a shorter itinerary length, better patient satisfaction, and improved provider and nurse satisfaction. Meetings began in December 2013 to develop a standardized treatment for CRS patients in the allergy clinic.

### **Standardization of Care**

During meetings with physician colleagues, it was determined that in order to be more efficient at treating patients, standardization was the key. Many providers are uncomfortable giving up control of a patient's care to a standard treatment plan or protocol for fear of diminishing the art of medicine. Meetings were scheduled once per week until a compromise on a standardized treatment plan for chronic rhinosinusitis patients was reached. CRS was used as this was the diagnosis which generated the longest itineraries and included new external patients who traveled to the clinic from some distance. The standard treatment plan cannot be emphasized enough as this was the catalyst for the remainder of the project.

The standardization meetings involved members of the division practice committee. The meetings allowed physicians to voice concerns along with discussing best practice. An extensive literature review was undertaken to help determine best practices. Through all of these steps, the physicians agreed to treat CRS patients in the same manner provided they did not have other urgent needs. The determination of the group was to allow prescheduling of a serum IgE blood test, olfactory test, and percutaneous skin tests. These were the tests every physician ordered at nearly every visit and were low risk, but high reward for a differential diagnosis (M. P., personal communication, January 13,

2014). Because the three tests were agreed to be needed by every patient and became a standard order for CRS patients, the patient appointment coordinators could schedule them before the consultation. This allowed for results to be viewable at the time of the consultation. This was a unique and promising first step, but for physicians to get all of the information and testing needed for differential diagnosis at the initial appointment, nursing assessment was needed.

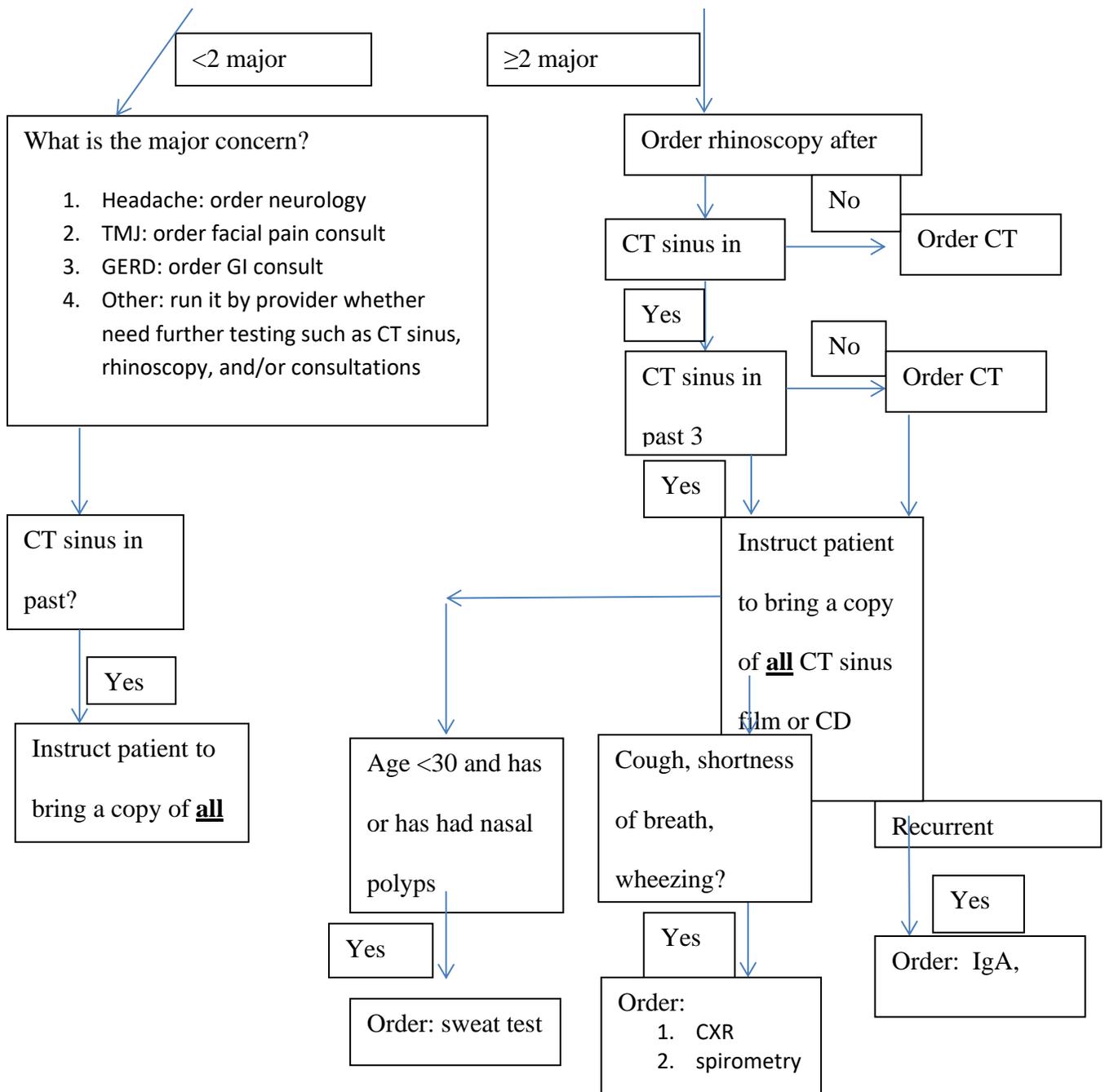
### **Pre-visit Questionnaire**

Once the treatment plan was agreed upon by the physicians, a standardized set of questions could be asked of patients before coming to their appointment in order to determine if further testing or consultation would be needed in addition to the standard three tests. The practice chair of the department collaborated with the nursing staff to create an algorithm (Figure 1) that could determine patient testing needs prior to the physician consultation.

The second part of the algorithm was a set of 20 questions (see Appendix A) created to align with the decision points of the algorithm. The 20 questions that support the CRS algorithm provide a template for the nurses to order CT scans, rhinoscopy procedures, x-rays, labs, sweat tests, spirometry, and consultations. Because a nurse can call a patient weeks before their scheduled visit, the tests can be ordered and scheduled the day before or the same day as the provider consultation. This allows for a physician to have all of the information needed to make decisions at the initial appointment. Calling patients to assess their needs before their appointment was a new practice for the allergy nurses.

Figure 1 : Pre-visit Algorithm

Major Symptoms	Yes	No	Present for ≥ 8 weeks
<b>P:</b> Facial Pain/pressure/Fullness			Y or N
<b>O:</b> Nasal obstruction/blockage			Y or N
<b>D:</b> Purulent anterior/posterior nasal Drainage (discharge may be nonpurulent, non-discolored)			Y or N
<b>S:</b> Hyposmia/anosmia (Smell)			Y or N



Benner's (1982) novice to expert theoretical framework was used to develop the resources for nurses as they began the new practice. For novice nurses, the paper forms of the questionnaire (Appendix A) and the algorithm (Figure 1) were developed and placed near the nurses' computers. During the first few weeks of the care model implementation, nurses referred to these with every patient and strictly adhered to the questions and algorithm. As the nurses became more comfortable with the process, they moved to Benner's (1982) stage of advanced beginner. At this stage the nurses and I collaborated to create tools that allowed for some additional assessment and streamlining of processes. A shorthand document was created to allow nurses to ask questions and enter responses in the medical record simultaneously which replaced the practice of writing patient responses on paper and transferring them to the medical record.

Another advancement for nurses in Benner's (1982) novice to expert model was making phone calls to the patients. The nurses began by simply calling patients and asking 20 questions and waiting for responses. The original 10 pre-visit phone calls averaged 48 minutes with a high of 150 minutes (M. P., personal communication, April 10, 2014). As the nurses became more adept at anticipating a patient's needs over the phone and at the skill of re-directing, the average dropped to 16 minutes by the time the 40<sup>th</sup> patient was contacted (M. P., personal communication, April 10, 2014). The added benefit to the pre-visit phone call was the development of a relationship with the patient that carried over to the post-consult nurse visit.

### **Nurse Visit**

One of the tasks nurses in the allergy clinic do is answer phone calls that frequently involve patient questions. The volume of phone calls increases when the ability for patients to schedule timely return appointments decreases (K. K-O., personal communication, January 13, 2014). Many of these phone calls involve questions surrounding diagnosis, treatment, or the plan of care. Through multidisciplinary meetings, it was determined that if nurses were able to spend time after the consultation educating patients on disease process, anatomy, physiology, and medication therapy, patients would be better able to manage their disease when returning home. Providing patients with a dedicated nurse appointment allows them to ask questions, learn medication administration techniques, and educate them about their disease. Because the initiation of this care model was for new external patients who are completing a multitude of tests, procedures, and consults during their stay, the nurse visit was scheduled the morning after the physician consultation. Scheduling the nurse visit subsequent to all of the testing and consults allows for the patient to digest what the physician told them and return the next day with questions formulated for the nurse. This process was created to not only decrease downstream non-visit care, but also to increase patients' satisfaction with their care.

Managing a calendar and visiting with patients to go over treatment plans, diagnosis, and anatomy and physiology was a new practice for the allergy nurses. Benner's (1982) novice to expert theory was used to develop the resources for nurses as they began the new practice. Simple paper diagrams and lists were used as the nurses first began seeing patients. As nurses became more comfortable with the process, they moved to Benner's

(1982) stage of advanced beginner. At this stage, tools were created that allowed for additional assessment and streamlining of processes. A medical model of the sinus and nasal passages was purchased for aiding the nurses in the explanation of anatomy and physiology. Packets with general topics, pictures, and videos were created so the nurse could assess learning needs and customize each visit to the patient needs. Monthly hourly education sessions were scheduled to have a physician expert in the field of CRS impart his/her knowledge to the nurses and provide the information necessary to be effective in the patient visit.

### **Advancing the Practice**

As the nurses moved through Benner's (1982) continuum, there was a desire to more quickly move to the expert level. The way in which the nurses have chosen to do this is through the advancement of technology used to streamline care. Much of the nurse visit centers around educating the patients on medications and medication administration technique. Because each nurse completed this process differently, patients were receiving different information depending upon which nurse did the teaching. The nurses met to try and standardize their approach much like their physician colleagues had done. The consensus from the nurses was that an online video would ensure that each patient receives the same message. Multiple opportunities arose out of the decision to create educational videos. The first opportunity was to purchase tablet systems and hand them to the patient when they arrived for testing. These tablets will be loaded with a standard symptom questionnaire that can be used for research by examining current treatment and symptom cessation. The tablets will also be loaded with the educational videos created by the nurses. This will allow the patient to look at the short videos during the initial part of

their itinerary when the testing takes place. With this tool, patients will have the opportunity to learn before the nurse visit and watch the videos multiple times if their learning style requires repetition.

The second opportunity for technology to advance nurses in Benner's (1982) novice to expert continuum was that of the online patient portal. The patient portal is a communication tool used by patients to send messages to their health care team, view test results, and schedule future appointments independently. This tool was already in place but used sparingly by patients. Because treatment has been standardized, the nurses have a good understanding after the initial phone assessment what the patient will need to be taught. This allows the nurse to send links to the appropriate educational videos to the patient weeks before their appointment time, which allows the patients to be well informed prior to their visit.

The third opportunity for technology in the care model is for the scheduling system to do much of the work for the nurses. When patients schedule their initial appointment, they are also asked for a range of time that would be convenient for the nurse to call them. This allows the nurses to call a patient when the patient is expecting it. In addition, the patient is mailed an itinerary, which includes the phone call appointment and instructions for gathering of materials prior to the phone call to will allow phone conversations with a patient to be brief and fruitful.

### **Quality Framework**

In order to do this, meticulous pre-implementation work was done including the distribution of an aim statement to all involved (see Appendix B). The goal of the aim statement is to ensure that everyone involved is aware of what the goals and aim of the

project are. The group created a fishbone diagram (see Appendix C) to determine the issues that could be improved upon. The fishbone diagram was created by the group as a simple visual representation of the inefficiencies the group identified. Along with this, a current state (see Appendix D) and future state (see Appendix E) diagram were also created based upon feedback of the group. Because the project was a quality improvement initiative, it is eligible to be submitted for maintenance of certification for the physicians and internal quality certification for nurses. This quality focus of the group allowed for multiple data points to be evaluated in determining the success of the project.

### **Butterfly Metaphor**

The butterfly life cycle is an appropriate metaphor for Benner's (1982) novice to expert theory. Butterflies begin as larvae much in the way that nurses begin as the novice to practice. Butterfly larvae will grow with the right amount of time and the correct conditions into caterpillars (Bishop et al., 2006). Nurses are similar in that with the right conditions of a healthy and nurturing environment, the nurses flourish and grow. The nurses go through periods of transition as they grow in each stage of their careers. The practice model follows this metaphor as nurses begin conducting nurse only visits. This is new and not familiar to them. Caterpillars grow and change into butterflies when they are matured (Bishop et al., 2006). Much like the butterfly, the nurses in the practice model are transformed when given the right tools and support. With the right conditions, they will become experienced practitioners adept at conducting patient visits independently. While metamorphosis physically changes caterpillars into butterflies, the largest change that is undertaken in the insect's lifecycle is a psychological one (Bishop et al., 2006).

This psychological change is because the butterfly has different habits, food sources, and predators than that of a caterpillar (Bishop et al., 2006). This psychological change is much like the one that nurses undergo as they move through Benner's novice to expert theory. Nurses go from the limited experience and just barely functional stage like larvae, to the confident, knowledgeable, and majestic stage much like a butterfly (Fig. 2). It is this metamorphosis of nurses that allow for the care model to flourish. The following chapter will demonstrate how the care model has fully matured into the majestic butterfly.

Figure 2: Monarch Butterfly



Retrieved from: [http://en.wikipedia.org/wiki/File:Monarch\\_In\\_May.jpg](http://en.wikipedia.org/wiki/File:Monarch_In_May.jpg)

#### Chapter 4: Measuring Progress of the Care Model

The workgroup tasked with carrying out this project was multidisciplinary in nature. The workgroup had patient satisfaction as the number one goal, but also desired to receive professional credit for the work that was being done. As ambulatory supervisor of the allergy clinic, it is part of my responsibilities to gather and compile data. All of the statistics contained within this chapter were compiled as part of my responsibilities to evaluate the success of this care model, the length of the patient itinerary time, patient satisfaction, and the evaluation of the nurse only visit.

##### **Itinerary Length**

Itinerary length is ultimately a measure of how long it takes for a patient to receive their answer to a health care issue. Many of the patients coming to the allergy clinic traveled from some distance, exacerbating the cost of treatment through meals and hotel room expenses. For this reason, itinerary length was agreed to be a crucial metric to measure.

Itinerary length was measured as the time from a patient's initial visit with the allergist until all further testing and consultation were complete. The control group was the final 25 patients to be seen in the CRS clinic before the care model was implemented. Measured simply through chart audit, the average length of itinerary for new external CRS patients was 4.15 days. The second metric was the number of tests, procedures, and consults the provider ordered at the consultation. This becomes important in determining itinerary length as further consults and testing can extend the itinerary length significantly depending upon appointment availability in other areas. Prior to beginning the care model, the allergy providers averaged 3.5 additional tests, procedures, or consults

ordered. One goal of the workgroup was to significantly reduce itinerary length by reducing the amount of additional testing and consultations ordered.

Currently, 40 patients have completed itineraries through the new care model. The average itinerary has been reduced to 1.87 days. The average number of additional tests, procedures, and consults ordered has been reduced to 1.17 consults. Empirically, it appears that the additional testing has changed from attempting diagnosis to simply ruling out other remote possibilities for diagnosis. As more data is accumulated, the workgroup will determine if there is a correlation between the type of post-visit testing and patients having a diagnosis, plan of care, and education when completing their itinerary.

### **Satisfaction**

Patient satisfaction is always of great importance to the allergy clinic, so it was measured along with caregiver satisfaction. Care giver job satisfaction had declined in the previous 2 years at the allergy clinic according to the results of our internal satisfaction survey of 2013. Some of the drop in caregiver satisfaction was shown to be from the nurses inability to provide timely answers to their patients. A patient satisfaction survey (see Appendix F) and a caregiver satisfaction survey (see Appendix G) will be administered to patients previously and subsequently to the initiation of the care model. Neither pre-implementation, nor post-implementation data are yet available. The survey data will be used to determine if the CRS care model has increased the satisfaction of patients and caregivers.

### **Non-visit Follow-up**

One innovation in the allergy clinic practice model is the implementation of a nurse-only visit subsequent to the appointment. Prior to implementation of the care model, 15%

of patients called into the allergy clinic within 30 days asking questions that needed to be answered by either the nurses or the physicians. After the initial 40 patients experienced the new care model, no patients called the allergy clinic to ask questions regarding their care. More data is necessary in order to directly confirm that the care model is providing patients with everything they need, making any further communication with the allergy clinic unnecessary.

### **Reflection**

Creation of the new practice model has been a successful, but tiring process. The care model provides solutions to many of the issues facing the allergy clinic and much of the health care system today. The model captures the unique talents and abilities of nurses to provide for a higher quality experience for the patient. The ancillary effect of higher patient satisfaction becomes care giver satisfaction. After the small sample of 40 patients, the results are promising that the model could be expanded.

Looking back to the beginning of the project, there are a few things the workgroup could have done differently. The first of these is to have a well-developed survey with results to determine exactly what the group wanted to improve. The group has years of experience and through observation believed that the appropriate areas of concern were changed. Ideally instead of going back to survey the patients as the care model was rolled out, it would have been more efficient to have the data prior to any meetings.

The other issue that should have been more closely observed is the workload of the physicians and the nurses. Nurses did measure pre-visit phone call time, but the overall time spent with patients pre and post visit was not looked at before the care model was initiated. Empirical evidence suggests the workload for the nurses has increased and that

of the physicians decreased. If we had measured data prior to implementation, we would have the ability to determine the workload variance.

Benner's (1982) novice to expert theory was a good theoretical framework from which to work. The nurses were enthusiastic but not experienced in the beginning of the care model implementation. Each of the 3 nurses struggled as they made the first few phone calls to the patients. They were adept at phone triage, but not so at phone assessment. Through experience the nurses have dramatically streamlined their individual processes to become more efficient at the pre-visit phone assessment. As they advance in their practice, they will continue to follow Benner's (1982) novice to expert continuum.

The multidisciplinary workgroup that was established for the CRS project was instrumental in making the project a reality. As a new supervisor, taking on the project and learning as I took part in the project was difficult. I learned more than anything how to adapt and adjust as the project moved forward. There were continuous inefficiencies that needed to be corrected as the project was implemented. Determining the correct resource to assist me in solving each of the inefficiencies was not an easy task. The lessons learned will make implementation of another project much smoother.

The practice care model implementation in the allergy clinic has shown promising results thus far. As more data is collected a broader view of the project will be gained by the workgroup. Mistakes have been made and the project has evolved as it matured. I have learned many lessons throughout the implementation of the project. The initial success has given the workgroup renewed enthusiasm for expanding and sharing the allergy clinic care model.

## Chapter Five: Conclusion

While moderate success has been gained from the care model thus far, in order to expand the scope of the care model, more work is needed. The data has shown that the care model can be successful in decreasing patient itinerary time and streamlining the patient visit. There are many opportunities for growth of the care model over the next few years.

### **Diagnosis Expansion**

The care model was piloted on the CRS diagnosis because the treatment plans could be standardized more simply than many other diagnosis. The care model also chose to only use new external patients because the assumption was that they were not local and would make appointments farther in the future than local patients. This would give the nurses more time to call for the pre-visit questionnaire. With this pilot being successful, the workgroup is now looking at how to expand.

There are two directions in which the care model might expand CRS patients who exist as local patients, could be added to the pilot group. The difficulties with this group are that most of these patients are local and prefer to take the earliest available appointment, many times the following day. This does not leave enough time for nurses to call and order additional testing per protocol. The group will continue to look at how we can modify the algorithms for these local patients.

The second and more likely way for the care model to expand is to keep the focus on new external patients, but expand to diagnosis other than CRS. The difficulties in this expansion are the vast differences in disease that the allergy clinic encounters in patients. Standardization in CRS was a large task that was made more palatable to the providers

because there is little literature on CRS treatment, and the pilot would offer data on a standard treatment. Many of the other disease processes seen in the allergy clinic have more literature available, but do not follow a simple algorithm as the CRS patients. Many of these patients need to have an exam before determining next steps (M. Park, personal communication May 1, 2014). Although this will be difficult, there are some solutions available.

### **Technology**

Technology can be an answer to the issue of patients needing an exam before testing can be ordered. Many times in the allergy clinic the exam includes assessment of urticarial (hives). Some of the tools that are becoming available include the following: video conference, sending still pictures via email, and the ability to send questionnaires via email. All of these tools could be used in the near future to examine and assess the patient while they are at home. This even brings forth the possibility of determining which tests and consults are necessary without a patient ever needing to make a trip to the allergy clinic. This is where the value of pre-visit assessment by RN's could be invaluable; saving patients time and money while opening access to allergy providers to those who most need care from a specialist.

### **Nursing**

The future of the care model for nursing provides an opportunity for nurses to practice in a new and exciting way that captures the unique talents of nurses. Instead of the current state of practice whereas nurses see patients for a short amount of time, the practice model provides for a nurse to act in a care manager role. The care model creates a responsibility for nurses to care for the patient in a holistic way. Nurses are involved

with the patient before they ever set foot in the clinic and are the last person a patient sees before they return home to care for themselves. This is a powerful way that nurses can ensure the patient is receiving the right care at the right time by the right person.

Expansion of the care model is truly a way for nurses to practice at the fullest extent of their licensure and education.

The changing landscape of practice in an allergy clinic in a large Midwestern hospital has allowed nurses greater opportunities in practice. I, along with a multidisciplinary workgroup identified the need for a different practice model along with the opportunity to expand the scope of practice for the allergy nurses. Through a series of meetings and informal conversations, a pilot care model was undertaken to determine the feasibility of nurses leading the assessment of patients. Although the data that supports this need is still being compiled, the team was confident that the new care model would rectify many of the issues with which patients and staff have traditionally been dissatisfied. As the new care model was rolled out and data became available on the patient itineraries and further testing, it became clear that the care model was a success. The success and expansion of the care model depends upon the continued willingness of a multidisciplinary team to work synergistically for the needs of the patient. Nurses have been at the forefront of this care model and the continued success will rely heavily on these nurses. The goal was to improve patient's lives and satisfaction with care. That goal has been accomplished through the implementation of the nursing care model in the allergy clinic.

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## Appendix A: Pre-visit Questionnaire

1. Have you experienced any facial pain, pressure, or fullness?
2. Have you experienced any nasal obstruction or blockage?
3. Have you experienced any nasal drainage? Color, >8wks?
4. Do you feel drainage run down the back of your throat?
5. Do you have a history of Nasal Polyps? Develop before the age of 30?  
Undergone surgery for Nasal Polyps? How many/last one?
6. Is sense of smell reduced/gone?
7. Been told you have nasal-septal deviation?
8. Received a diagnosis of allergic rhinitis?
9. Are nasal symptoms seasonal?
10. Have you undergone allergy testing?
11. Have you had a sinus CT in past 3 months?
12. Are you a past or current smoker?
13. Symptoms of cough, chest-tightness, S.O.B., or wheezing?
14. Diagnosis of Asthma?
15. Recurrent pneumonia or bronchiectasis?
16. Frequent headaches?
17. Frequent stomach problems or Reflux?
18. Recurrent Jaw pain (TMJ)?
19. Diabetic/allergic to contrast dye/on dialysis?
20. Willing to take part in research?

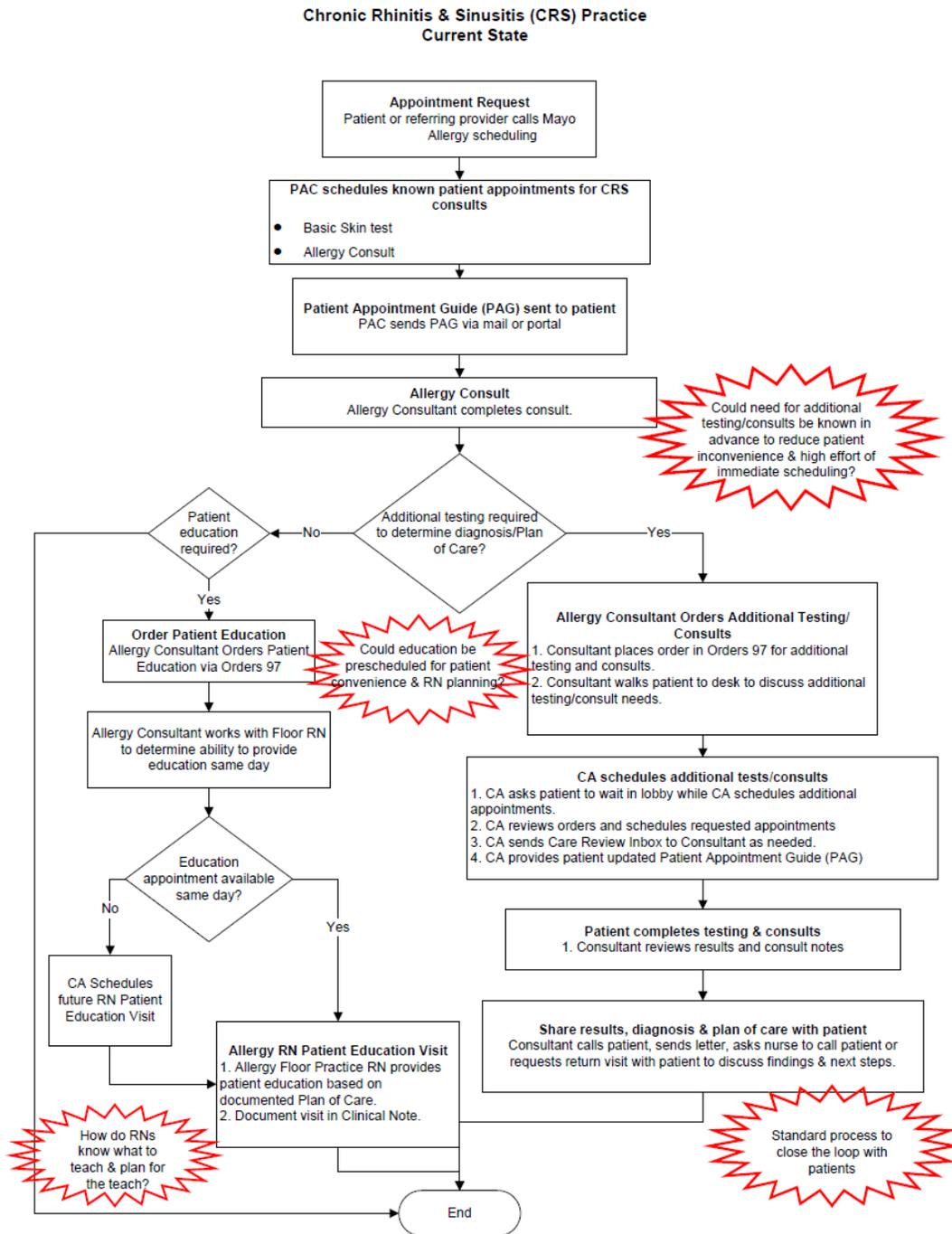
## Appendix B: Project Aim Statement

Patients with suspected diagnosis of CRS require significant testing to provide a diagnosis and plan of care. CRS patients currently have an average of 3.5 tests and/or consultants scheduled after their Allergy Consult resulting in an itinerary duration of 4.15 days. The gap in the quality of care is that patients are scheduled for additional testing to determine diagnosis reducing the ability to provide necessary patient education. This quality improvement project was initiated to improve the pre-consult scheduling to ensure required tests and consults are completed prior to the Allergy Consult resulting in reduced patient itinerary length, improved patient education visit completion, improved employee satisfaction and improved patient satisfaction.

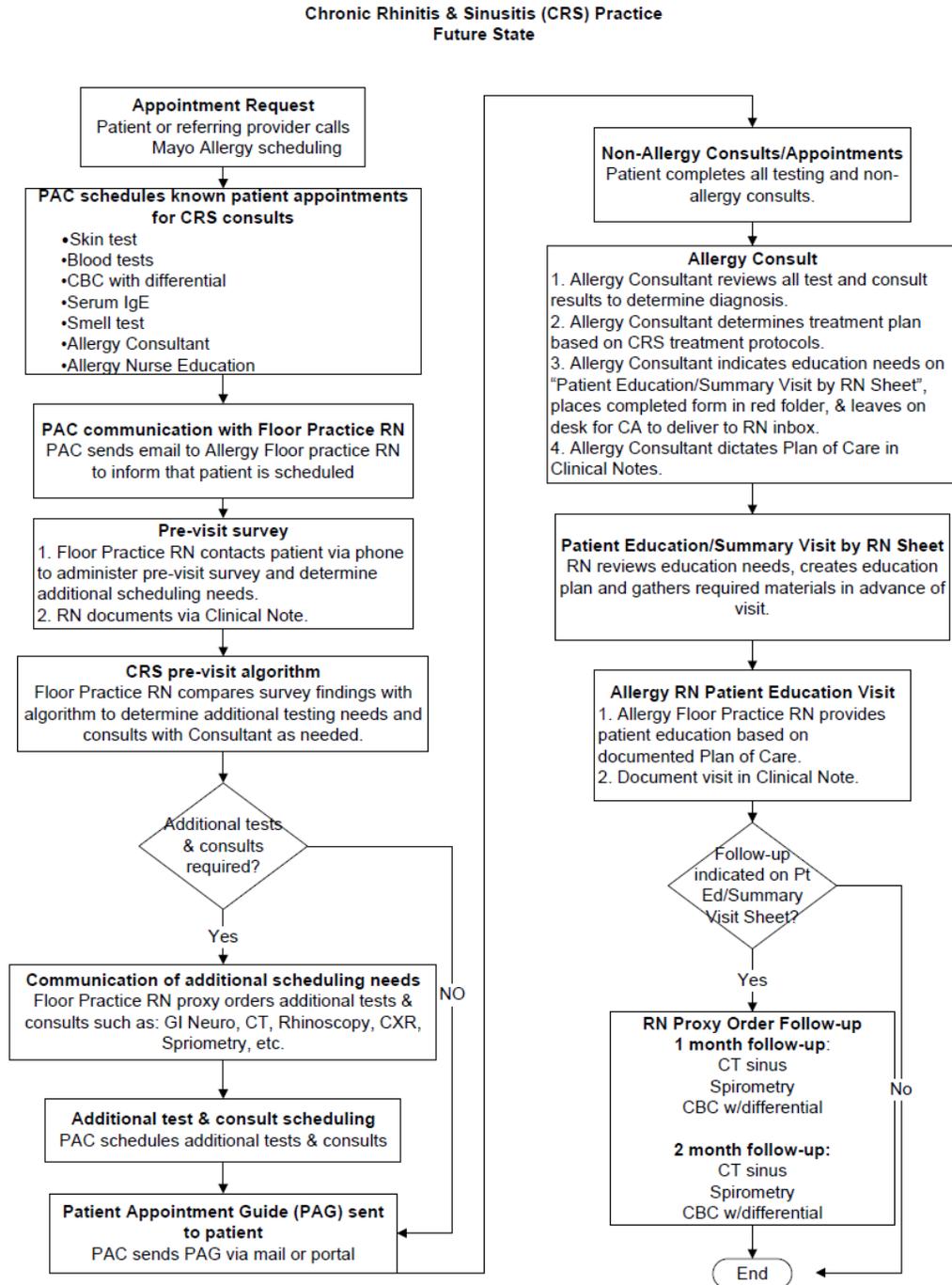
Measure	How measured
1. Itinerary length	<ul style="list-style-type: none"> <li>• Pre-pilot and pilot patients: Number of days from first to final CRS related appointment</li> <li>• How far out would the itinerary go if we had to schedule today what was already pre-scheduled?</li> </ul>
2. Pre-scheduling accuracy	<ul style="list-style-type: none"> <li>• Day of Allergy consult: Did we get it right?               <ul style="list-style-type: none"> <li>○ All required tests and consults scheduled? If no...what's missing? Could we have known this?</li> <li>○ Tests and consults scheduled that are not required? Anything we wouldn't have scheduled now that we've seen the patient?</li> </ul> </li> </ul>
3. Patient Education Visit	<ul style="list-style-type: none"> <li>• % of patients with completed education visit pre-pilot</li> <li>• % of patient with completed education visit during pilot</li> </ul>
4. Staff Satisfaction	Pre and post pilot
5. Patient satisfaction	Pre and post pilot
6. Accuracy of the algorithm	<i>How can we measure whether or not the algorithm works?</i>



Appendix D: Current State Diagram



Appendix E: Future State Diagram



## Appendix F: Patient Satisfaction Survey

**Survey Questions:****Scheduling coordination and itinerary**

1. It was simple to schedule an appointment.
  - a. Strongly disagree
  - b. Somewhat disagree
  - c. Neither agree nor disagree
  - d. Somewhat agree
  - e. Agree
  - f. Strongly agree
  - g. Does not apply/don't know
2. Tests and procedures were adequately explained to me before they were done.
  - a. Strongly disagree
  - b. Somewhat disagree
  - c. Neither agree nor disagree
  - d. Somewhat agree
  - e. Agree
  - f. Strongly agree
  - g. Does not apply/don't know
3. Additional tests and appointments were carried out promptly and efficiently.
  - a. Strongly disagree
  - b. Somewhat disagree
  - c. Neither agree nor disagree
  - d. Somewhat agree
  - e. Agree
  - f. Strongly agree
  - g. Does not apply/don't know
4. An appointment was available when needed.
  - a. Strongly disagree
  - b. Somewhat disagree
  - c. Neither agree nor disagree
  - d. Somewhat agree
  - e. Agree
  - f. Strongly agree
  - g. Does not apply/don't know

5. The amount of time required to complete all appointments and tests was appropriate.
  - a. Strongly disagree
  - b. Somewhat disagree
  - c. Neither agree nor disagree
  - d. Somewhat agree
  - e. Agree
  - f. Strongly agree
  - g. Does not apply/don't know

### **Education & Plan of Care**

1. Did you meet with a nurse educator in Allergy?
  - a. Yes
  - b. No
  - c. Unsure
2. Medications and care at home were explained to me in a way I could follow.
  - a. Strongly disagree
  - b. Somewhat disagree
  - c. Neither agree nor disagree
  - d. Somewhat agree
  - e. Agree
  - f. Strongly agree
  - g. Does not apply/don't know
3. Clinical staff helped me to understand my health condition.
  - a. Strongly disagree
  - b. Somewhat disagree
  - c. Neither agree nor disagree
  - d. Somewhat agree
  - e. Agree
  - f. Strongly agree
  - g. Does not apply/don't know
4. My health-related questions were answered in a way I could understand.
  - a. Strongly disagree
  - b. Somewhat disagree
  - c. Neither agree nor disagree
  - d. Somewhat agree
  - e. Agree
  - f. Strongly agree
  - g. Does not apply/don't know

5. I was given the chance to provide input to decisions about my healthcare.
  - a. Strongly disagree
  - b. Somewhat disagree
  - c. Neither agree nor disagree
  - d. Somewhat agree
  - e. Agree
  - f. Strongly agree
  - g. Does not apply/don't know

**Next steps & Follow up**

1. I was referred to the proper place for follow-up care if needed.
  - a. Strongly disagree
  - b. Somewhat disagree
  - c. Neither agree nor disagree
  - d. Somewhat agree
  - e. Agree
  - f. Strongly agree
  - g. Does not apply/don't know
2. I was given instructions for follow up care.
  - a. Strongly disagree
  - b. Somewhat disagree
  - c. Neither agree nor disagree
  - d. Somewhat agree
  - e. Agree
  - f. Strongly agree
  - g. Does not apply/don't know
3. I knew what the next steps were after leaving the clinic.
  - a. Strongly disagree
  - b. Somewhat disagree
  - c. Neither agree nor disagree
  - d. Somewhat agree
  - e. Agree
  - f. Strongly agree
  - g. Does not apply/don't know

**Teamwork**

1. There was good teamwork among the doctors, nurses, appointment schedulers and other staff who cared for me.
  - a. Strongly disagree
  - b. Somewhat disagree
  - c. Neither agree nor disagree
  - d. Somewhat agree
  - e. Agree
  - f. Strongly agree
  - g. Does not apply/don't know

**Overall satisfaction**

1. Overall, how would you rate your experiences related to the care you received for your allergy needs?
  - a. Excellent
  - b. Very good
  - c. Good
  - d. Fair
  - e. Poor
2. What went well from your experience with Mayo Clinic Allergy?
3. What areas we could improve on from your experience with Mayo Clinic Allergy?

## Appendix G: Allergy CRS Care Team Satisfaction

**Survey questions:**

1. Overall satisfaction:
  - a. Overall satisfaction in CRS patient care
    - Excellent
    - Very good
    - Good
    - Fair
    - Poor
  - b. I am satisfied with the availability and quality of the resources to meet the needs of CRS patients.
    - Strongly agree
    - Somewhat agree
    - Neither agree nor disagree
    - Somewhat disagree
    - Strongly disagree
  - c. Midwest Clinic in Rochester has a strong program to meet the needs of CRS patients.
    - Strongly agree
    - Somewhat agree
    - Neither agree nor disagree
    - Somewhat disagree
    - Strongly disagree
2. Advance coordination: All tests and consults scheduled in advance of patient arrival?
  - Strongly agree
  - Somewhat agree
  - Neither agree nor disagree
  - Somewhat disagree
  - Strongly disagree
3. Summary/Loop Closure:
  - a. There a clear plan to provide a summary of the visit and plan of care for the patient
    - Strongly agree
    - Somewhat agree
    - Neither agree nor disagree
    - Somewhat disagree
    - Strongly disagree
    -

- b. CRS patients leave Midwest Clinic with an answer and plan or care
    - Strongly agree
    - Somewhat agree
    - Neither agree nor disagree
    - Somewhat disagree
    - Strongly disagree
  - c. I have what I need to care for the patient
    - i. Outside records
      - Strongly agree
      - Somewhat agree
      - Neither agree nor disagree
      - Somewhat disagree
      - Strongly disagree
    - ii. Prescheduled test results
      - Strongly agree
      - Somewhat agree
      - Neither agree nor disagree
      - Somewhat disagree
      - Strongly disagree
    - iii. Access to nurse education
      - Strongly agree
      - Somewhat agree
      - Neither agree nor disagree
      - Somewhat disagree
      - Strongly disagree
    - iv. Adequate time with the patient
      - Strongly agree
      - Somewhat agree
      - Neither agree nor disagree
      - Somewhat disagree
      - Strongly disagree
4. Barriers
- a. What are the barriers to providing an ideal patient experience?
    - i. Written response
  - b. What are the barriers to providing an ideal staff experience?
    - i. Written response

**Survey recipients to be identified by role:**

1. Physician/NP
2. Clinical Assistant
3. Patient Appointment Coordinator
4. Floor RN
5. Lab RN
6. Medical Secretary