ANESTHESIA DELIVERY IN OFFICE-BASED SURGERY: QUALITY-OF-CARE AND PATIENT SATISFACTION OUTCOMES

by

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DEDICATION

This dissertation it its entirety is dedicated to the most important person in my life, my husband Wayne. He consistently and tirelessly has been my mentor, my companion, my confidante, and my driving force as I worked to complete this research. He has kept me focused, offered me patience, love, support and wisdom, when I needed it the most. He has taken over the care of our children many times by himself and more times than I can count, to make sure I had time to complete this challenging task. He is truly my best friend and I am forever grateful to him. Thank you Wayne.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

The concept of office-based surgery, where surgical procedures are performed in the physician owned office-based environments instead of hospital operating rooms, is rapidly gaining widespread popularity. For many of the surgical procedures now carried out in the office-based settings, especially for those that are complex in nature, seemingly an un-written rule exists that a licensed anesthesia provider administer the anesthetic and perform the patient monitoring. Resulting from process improvement and quality care initiatives, this allows surgeons' to focus solely on the operation, instead of both the surgical procedure and the administration of the anesthetic.

The reasons for the widespread popularity of office-based surgery, coupled with an office-based anesthetic, appear to be multi-faceted. First, reimbursement many times sets precedence in health care environments. According to Tunajek (1999), shifts in payment for outpatient services promote increased numbers of procedures requiring surgery with anesthesia are performed in outpatient settings such as the physician's office. Second, compared to traditional hospital environments, office-based settings have lower overhead costs for surgical and anesthesia equipment, as well as decreased costs for pharmaceutical agents used during the peri-operative (surgical) period. Third, many surgeons have expressed dismay over the inefficiencies of hospitals and/or ambulatory surgery centers, specifically related to patient scheduling, and wanted to have greater control over the peri-operative process for their patients. Performing surgery in their offices could

achieve this. Related to this is an ease of accessibility to the office-based arena for patients receiving care in this particular environment, in general. It appears to be a much simpler process for surgical patients to move through the stages of the peri-operative period, i.e. the sequence of steps of the admission, the pre-operative period, actual surgical period, and discharge process is less attenuated in the office-based setting. Repetitive steps for the patients are minimized (compared to that of a hospital process) and this streamlines the entire process. Lastly, the numbers of office-based surgeries are expected to increase and Laurito (1998) projected a rapid rise in the number of surgical procedures in the office and therefore the potential for the administration of anesthesia in the office setting, such that 25% of all elective surgical procedures will be performed in this venue by the year 2001. While this projection, at least for Michigan, proved to be somewhat inflated, office-based surgery and therefore anesthesia seems likely to increase. As an example of the growing trend, Jordan (1999) stated that 8.5% of all surgical procedures were done in the office in 1994. This approximates a 16% increase in less than a decade.

In the 1970's and 1980's, anesthesia for a variety of simple and minimally invasive office-based procedures usually consisted of intravenous sedation many times given without an anesthesia professional in attendance (Hoefflin, 2000). This limited the surgeon in terms of which types of procedures he could perform since he/she could not simultaneously monitor a patient appropriately, as well as perform the surgery. Legislative regulatory assessments and reforms, process improvements measures, the establishment of standards of care coupled with advances in the art and science of anesthesia, have led to changes in how surgical procedures are performed in the office setting. Thus, with more complex procedures, surgeons

required a surgical support team. These changes brought anesthesia providers to the office-based setting. Such a move ostensibly also improves quality of patient care. Nonetheless, many stakeholders in office-based surgery, such as third party insurers, policy makers within state government, health care providers, and some consumers, currently view office-based surgery as non-traditional and controversial. Such skepticism seems related to a lack of knowledge about what actually transpires in this area of medical practice and the fact that poor outcomes have been haphazardly reported in the media, albeit rare, but without legitimate analysis and determination of cause.

Although the practice of office surgery and nurse anesthesia, specifically within the state of Michigan, is delineated within the Michigan Administrative Rules (2000) and the Michigan Public Health Code (2000) respectively, the wording within these documents is not designed to offer stakeholders complete understanding of what really goes on within the settings, especially how quality of patient care is maintained. Nor are the Administrative Rules designed to regulate the practice of office surgery.

One controversial aspect of the concept of office-based surgery and anesthesia appears to revolve around the politics of anesthesia care and encompasses the infamous tension between physician anesthesiologists and nurse anesthetists. The American Society of Anesthesiologists, in their statement on Qualifications of Anesthesia Providers in the Office-Based Setting (approved by their House of Delegates on October 13, 1999) states that anesthesiologist participation in all office-based surgery is optimally desirable as an important anesthesia patient safety standard, and it will always support such a standard. In contrast, the

American Association of Nurse Anesthetists (AANA) authored the Standards for Office Based Anesthesia Practice (1999), understanding that Certified Registered Nurse Anesthetists (CRNAs) have long been the predominant anesthesia practitioners and leaders in providing anesthesia services in physicians offices, and do not believe anesthesiologist involvement is a necessity for high quality patient care in this setting. Thus, anesthesia care decisions fall at the intersection of economic factors related to insurance reimbursements, historical tensions about the kinds of provider qualifications needed to maintain quality of care, and patient preferences for medical services.

Irrespective of the growing trend and the fact that plastic surgical, urology and dental services are currently performed in the office setting, several Michigan policy - makers have, in personal communication (unpublished), confirmed that there remains a perceived innovativeness and lack of knowledge of the concept of office-based surgery and anesthesia.

From the anesthetic perspective, the basic and guiding principles of physiology and pharmacology do not change with the 'site' of anesthesia. However, the way in which anesthetics are best provided does change (Friedberg, 1998). The physical environment itself, with minimal resources, mandate tailoring the anesthetic differently compared to that in a traditional surgical setting. In addition, the role of the anesthesia provider as well as others in the surgical team is often expanded due to the decreased numbers of people in the team (compared to a hospital-based surgical team). The nurse anesthetist, who administers anesthesia to patients in the setting, may also be required to assume the role of patient educator, pre-operative and post-operative recovery room nurse, as well as the bio-medical (equipment)

engineer, supply manager, office manager, process improvement coordinator, quality assurance monitor, and consultant to the surgeon. The nurse anesthetist must provide anesthesia care first to the patient, move the patient expediently through an anesthetic process, and discharge them home without any adverse responses requiring an immediate continuation of anesthesia or other health care. Nurse anesthetists are an integral component of the big picture in efforts to promote patient satisfaction and positive outcomes, and they must guarantee quality patient care with an understanding of the social and political climate of office-based surgery.

The expanded role of the anesthesia provider clearly exists on a continuum depending on office locale, while differences in the physical environment also impact the outcomes of the process in this setting. For example, there is simply not room for a prolonged recovery room stay for patients. It is not feasible, safe, or logistically possible to have patients 'lined up' in a recovery area. There may not be a recovery room nurse at all, let along more than one for several patients. The nurse anesthetist may be the recovery room nurse. Subsequently, all patients, for a variety of reasons, are expected to go home within a very short period of time after surgery. There are limited specialists and material resources that are available to deal with crisis, such as medical technologists and laboratory specialists needed if a patient should hemorrhage, and cardiologists with their associated supportive technology, should a patient experience cardiac dysfunction during surgery or post-operatively.

While anesthesia providers have been battling with each other to protect their practice turf and scope of practice in general, while some insurance companies have remained traditional in their thinking of 'where' surgery needs to be performed in order for it to be a reimbursable entity, while policy makers have tried to

understand the entire concept in efforts to make sure that the notion of surgery in this alternative environment is appropriate, and while surgeons strive to provide medical services sought by their patients; these discussions rarely encompass how patients experience office-based surgery events. In particular, we know little about what the patients want, what the experience is like for them, what happens in this setting, what components of the process contribute to patient satisfaction, quality, and positive outcomes, and how the system works.

Without such information, understanding and improving office-based surgery is blind to an important dimension. Such understandings could prove crucial to allaying fears about office-based surgery.

Statement of the Research Problem

Office-based surgery and office-based anesthesia is an emerging and growing entity within the state of Michigan (and nationwide). The database of plastic surgeons, urologists, and dentists who now perform surgery in their offices is significantly larger than a decade ago. This is evident in advertisements seen on billboards, in general mailings to consumers, and in the yellow pages. Additionally, the database from the American Association of Nurse Anesthetists annual practice survey verifies that more surgeries are performed and more nurse anesthetists are working administering anesthesia in the office-based setting.

With this movement towards a different situation where surgery and anesthesia is performed and administered, and where the practice of nurse anesthesia is diverse, there comes a need to assess the patient outcomes after anesthesia in this setting. According to Faust (1998) outcomes research involves the result of the patients' medical (nursing) care. It emphasizes the assessment of

patients' functional capacity and/or quality of life. Additionally, the effect of an actual therapeutic intervention is assessed. Some of the goals of outcomes research include the demonstration of the quality of health care, the assessment of patient satisfaction, and the impact of care on the physical, emotional, mental, and social well-being. Data can provide information on what the patients perceived to be optimum health care as well as offering an understanding of processes and procedures. Both surgeons and anesthetists can use the data gathered from outcomes research to improve upon their own practices, to promote patient perceptions of quality health care.

Unfortunately, outcomes research tools in nurse anesthesia, especially relating to office-based anesthesia, are critically limited. If any data is collected at all, it is usually adapted from pre-existing quality indicator forms. These forms have lists of complications that can result from problems with anesthesia, but such complications are specific to the way anesthesia is administered in a hospital setting. They are often not pertinent to assessing outcomes after anesthesia in the office setting. Furthermore, the forms do not address patient perceptions of favorable or unfavorable outcomes, quality or satisfaction with anesthesia care, opinions about the processes, or an evaluation of the setting. To date there exists almost no opportunity for input from patients about their care nor has the culture of the emerging surgical environment been depicted.

Understanding patients' perspectives fits into current healthcare discussions, especially consumerism, a theory explaining how growth and success of medical practices depends on marketplace considerations. According to Warner (1997), in today's competitive health care marketplace, we must begin offering superior patient

satisfaction through patient-centered care. Patient-centered care is a concept of care that focuses on fulfilling the patient's needs above and beyond their expectations. To date, the nurse anesthesia profession has not focused on collecting data specifically from patients themselves, nor have we conducted field research, which would attempt to understand how the patient's needs are met above and beyond their expectations. While nurse anesthetists have engaged in emphasizing their role in the office-based environments, and have attempted to influence those who make policy as well as those who reimburse for such services, we have to date not provided information to stakeholders that offer patients perspectives of outcomes or the process itself; we have not assessed the experiences of our consumer, the patient. This research begins with the task of filling that void and will study nurse anesthesia care in an office-based setting and also from the vantage point of the patients. Thus, this research follows in the tradition termed outcomes research.

Outcomes Research in Anesthesia Care

Outcomes research in health care (globally) is in an era of unprecedented growth. Tobin (2000) stressed an urgency of conducting nurse anesthesia outcomes research in the office-based locale, because state regulations are being developed for office-based surgery and anesthesia, and information is needed to guide those policy discussions. Such information would help disrupt erroneous assumptions about patient care. For instance, a policy-maker told me that patients wouldn't be comfortable receiving anesthesia and/or having a nurse anesthetist in an office setting directly contradicting my sense of the realities (gained while practicing nurse anesthesia care). Additionally, some states' policy-makers (New York, Report of

Senator Roy M. Goodman, 1999) believe that office-based surgery is "rife with problems," because they only hear of very rare, dramatic bad surgeons and their offices, and know little about nurse anesthesia care. Such everyday policy-makers' misconceptions of the problems emphasize the need for a systematic way to assess what is going on in this environment and how patients perceive their care.

In the report of Senator Goodman, he concludes that the performance of surgery and the administration of anesthesia are serious undertakings in any facility, and when performed well, can enhance health well being, and quality of life for many patients. He states that numerous problems have been reported with office surgery and anesthesia delivery in the state of New York, and that regulations should be imposed to prevent any further poor patient outcomes. Unfortunately, he has determined that poor outcomes related to anesthesia delivery would be minimized if supervisory mandates were imposed upon nurse anesthetists in select situations (when general anesthesia is administered). While regulating office practices that would result in upholding public health and safety codes, physician and nurse qualifications; licensure and certification, and reporting of adverse outcomes is not disputed, there is lack of evidence that nurse anesthesia supervision promotes patient satisfaction and quality outcomes of care. There is no relationship between the problems offices have and whether or not the nurse anesthetist was supervised.

Biddle (1994) reviewed that which has proved beneficial in terms of promoting safe and high quality anesthesia care and what is incomplete in outcomes research for the practice of anesthesia in general. He assessed outcomes research that has been conducted in the specialty of anesthesia and asks a controversial question: Are we going in the right direction? Biddle emphasizes the benefits of

outcomes research as a method to measure the impact of change. However, within the specialty of anesthesia, most outcomes research has focused on adverse events as seen via hindsight. Both the ASA Closed-Claim research (Cheney, 1989) and the AANA Closed-Claim research (Jordan, Kremer, Crawforth, and Schott, 2001) analyzed unfortunate outcomes and determined the factors that contributed to these. Via such studies, providers can then learn from mishaps, and use this information to raise standards of care and prevent future adverse events. However, as Biddle (1994) points out, this information has future limitations: 1) lack of information of the patient population from which the cases arouse making transfer of the findings to specific individuals impossible, 2) doubts about how representative the cases are as they are the worst situations, making anticipating future events difficult, and 3) seemingly arbitrary exclusion of certain types of cases (i.e. dental trauma) creating gaps in the analysis.

Very little of this research provides guidance about what nurse anesthesia research needs to measure. Almost ten years ago, Moller et al (1993) published a study that assessed the use of pulse oximetry in over 20,000 cases. Among other things, he found: 1) the most important factor in anesthesia safety is the presence of an informed, alert, and attentive provider and 2) anesthesia providers have become so good at preventing catastrophes that perhaps more attention now needs to be diverted to the minor morbidities that have an impact on patient satisfaction.

Marcario, Weinger, Carney, and Kim (1999) expressed that the highest quality anesthetic and related postoperative outcomes for any patient can depend on a subjective assessment of his or her level of well being in different health states (expressed as preferences for those clinical anesthesia outcomes). The researchers

resolved that patients are the customers of the anesthesia service; it seems appropriate to determine what the patient values, and then tailor the anesthetic to meet each patient's requirements. In this research, the patients were asked to rank order ten possible postoperative outcomes from their most undesirable to their least desirable. Subsequently each subject was also asked to distribute a theoretical $100 among the 10 outcomes, proportionally more money being allocated to the more undesirable outcomes. The goal was to quantify patients' preferences for postoperative anesthesia outcomes. The patients were asked to prioritize a specific set of pre-determined post-operative outcomes in the hospital setting. Outcomes were listed and defined for the patient and included those known to be commonplace after anesthesia administered for variety of both highly complex (cardiac) and minimally complex (gynecological) in the hospital, i.e. gagging on an endotracheal tube, residual weakness, sore throat, vomiting, etc. They found variability in how patients rated post-operative outcomes, but avoiding nausea and vomiting, minimizing pain, and not gagging on endo-tracheal tubes were of high priority. Limitations of the study include the fact that patients were asked to rank a set of pre-determined outcomes that physicians believed would be important to an average or typical patient. There was no opportunity for the patients to express outcomes deemed important and experienced from their own vantage point.

Faust (1998) in an editorial in the Journal of the American Academy of Dermatology, focused on disseminating and communicating the purpose and importance of outcomes research. She states that outcome of care evaluates the patients' functioning after receiving care and contrasts with the emphasis on the process of care. However, the two are inter-related and the process of care can be

influenced by the functional status of the patient after receiving the care. It is not a simple concept. Levin et al (1997) concludes that, contrary to the assertions of many researchers and alternative practitioners, established research methodologies and data-analytic procedures are quite satisfactory for addressing the majority of study questions related to alternative medicine. Outcomes research is needed for both traditional medicine and alternative medicine disciplines. While office-based surgery with anesthesia delivery is not alternative medicine per se, it is different and considered non-traditional from the vantage-point of stakeholders. I wondered, if a formal, objective, systematic process to describe, test relationships, and examine cause-and-effect interactions among variables was used, if appropriate quantitative data was obtained, what would make Levin question the use of quantitative methods in research? Assessing patient outcomes following alternative or non-traditional methods of care delivery does not influence whether multiple regression analytic techniques, for example, are befitting. Adding scientific rigor to the research process would be to determine the nature of the research question, ascertaining what type of data to collect that provides explanations and answers to the research question, and determining the suitable methodology to collect data. This should lead researchers to make the appropriate decisions to carry out studies in either quantitative or naturalistic modes, not whether that which is studied is considered traditional.

Significance of the Study

With the volume of office-based surgeries using anesthesia on the rise, the American Association of Nurse Anesthetists (AANA) has formally developed Standards for Office Based Anesthesia Practice (1999). Within the text of these

standards, it is recognized that they are congruent with the AANA Scope and Standards of Nurse Anesthesia Practice, and are intended to:

- Provide assistance to Certified Registered Nurse Anesthetists (CRNA) and other practitioners by promoting a common base for the delivery of quality patient care in the office-based setting
- Assist the public in understanding what to expect from the practitioner
- Support the basic rights of the patient

It is also stated within these standards, whilst their intent is to promote highly quality patient care, they cannot assure specific health outcomes. In other words, while following the standards is imperative for obvious patient safety reasons, we do not know to what extent they contribute to all favorable anesthesia outcomes, such as satisfaction with care. There remains a gap in knowledge about what happens in these settings, and what stakeholders such as the patient, make of office-based anesthesia care.

The results of this study will be of value to all individuals who are concerned with anesthesia outcomes in the office-based setting. Results will suggest ways to improve anesthesia care and patient satisfaction outcomes. The study will give needed information about the patients' perceptions of having surgery and anesthesia in the office, help policy makers understand the practice, and assist the care providers to understand what changes, if any, need to be made to enhance patient satisfaction.

Assumptions and Limitations of the Study

For the purpose of this study, it is assumed that:

- Office-based anesthesia is occurring
- Quality care and patient satisfaction are related
- Office-based surgery is not the same as hospital-bases surgery
- Outcomes research is needed

The limitations of the study include:

- This is not research comparing hospital anesthesia care with office-based anesthesia care
- The focus is on anesthesia, not surgery

Research Questions

There are three research questions that address the problem statements for this study. They are:

1) What is happening in office-based anesthesia in plastic, dental and urology surgery in Michigan?
2) What are all the roles of the nurse anesthetist in these settings?
3) What sense do the patients' make of having surgery with anesthesia delivery in the office-based setting?

CHAPTER 2

CONCEPTUAL FRAMEWORK

Studying both anesthesia outcomes and patient satisfaction with anesthesia requires melding ideas from different lines of thought. The following sections frame the research beginning with an emerging way of studying medical practices—outcomes research moving through ways to account for patients' perception about their care, and finally culminating in a review of research in office-based settings. This chapter is divided in to the following sections: (a) the impetus for outcomes research in office-based anesthesia, (b) working with the Medical Outcomes Study Framework, (c) quality of care from the patient's perspective, (d) rationale for an outcomes oriented approach in understanding office-based anesthesia, and (e) clinical anesthesia research in the office-based setting.

The Impetus for Outcomes Research in Office-Based Anesthesia

Understanding outcomes research is important for promoting quality-care and patient satisfaction, yet few anesthesia studies relative to this have been performed. In terms of evaluating outcomes specific to the specialty of anesthesia, Lee and Lum (1996) and Biddle (1994) offer a comprehensive review of past practices and suggest futures directions. Reviewing the studies that have been carried out assessing outcomes, Lee and Lum (1996) found that a method to evaluate anesthetic services involving comparison of outcomes adjusted by patient risk factors is necessary. Risk adjustment, they determined, is a way to minimize the confounding factors in studies whereby random assignment to different treatments is absent. In the review by these authors, they identify the anesthesia outcomes and

risk factors measured, and highlight methods of risk adjustments used in previous studies. Risk factors that have been identified and singled out include, but are not limited to: advanced age, male gender, higher acuity status (measured by the American Society of Anesthesiologists' physical status classification), major surgery, emergency procedures, intra-operative surgical complications, opioid techniques, and the number of anesthetics drugs administered (Cohen, Duncan, & Tate, 1988). Ostensibly, these factors are minimized in office-based settings due to control of patient (with the exception of male gender) and even procedure selection criteria. One aspect of risk factors may be the office setting itself as a place where surgeries are performed; a second risk factor may be the distinctiveness of providers administering the anesthesia. These are two of the many unknowns specific to office surgery that will be researched in this study.

According to Tobin, Conover, and Anderson (2002), the issue of physician office surgery and anesthesia practice is hot and getting hotter in the legislative arena. Until the past few years, little attention was given by policy-makers to the physicians' office surgery practice. This is now changed. While the attention has increased, there are critical facets of office-based surgery not understood (risk factors being one such facet, outcomes of care being another). This lack of knowledge has not halted policy-makers from interfering in the form of promoting legislative guidelines and regulations. Outcomes research is one important scientific methodology that has been developed to examine the end results of patient care. It incorporates, as one component, evaluation research. It addresses quality care components, as well as patient satisfaction.

A void exists relative to outcomes research in the office-based setting; specific to quality care components and patient satisfaction. This research will attempt to fill that void. It may be one piece of data that policy-makers can use to legitimize their decisions.

Working Within the Medical Outcomes Study Framework

A conceptual framework was developed for the Medical Outcomes Study (MOS), conducted by Tarlov, Ware, Greenfield, Nelson, Perrin, and Zubkoff (1989). The MOS was a 2-year observational study to determine whether variations in patient outcomes are explained by differences in systems of care, clinician specialty, and clinicians' technical and interpersonal styles, and to develop more practical ways for the routine monitoring of patient outcomes in medical practices. The key interest was to identify and preserve the features of care that promoted positive care results, despite the health care changes made in the cost-conscious environment.

This 2-year observational study focused on patients with one or more of four chronic conditions seen predominantly in adults: hypertension, coronary artery disease, diabetes mellitus, and depression. It was implemented in a five-step process that included: 1) selection of appropriate geographic sites, 2) selection of systems of care, 3) selection and recruitment of clinicians, 4) selection and recruitment of patients; and 5) data collection.

Clinicians (n=523) were randomly sampled from different health care settings across the United States. In the cross-sectional study, adult patients (n=22,462) evaluated their health status and treatment. Samples of these patients (n=2349) with diabetes, hypertension, coronary heart disease, and/or depression were selected for the longitudinal study. Their hospitalization and other treatments were

monitored and they periodically reported outcomes of care. At the beginning and end of the longitudinal study, the MOS staff performed physical examination and laboratory tests.

The data needed to conduct analysis required the collection of information about patient case mix, variations in technical and interpersonal styles of practice, and provider and patient characteristics that would explain those variations, as well as patient functioning and other outcomes. The authors felt no one source of information could be consider the gold standard so they implemented a complementary set of data collection strategies to evaluate the usefulness of each as a source of information about variations in style of practice and outcomes of care, and to test the sensitivity of conclusions to analyses of different data sources. The sources of data for major study variables therefore included providers, patients, the medical record, and clinical examinations.

The goal of the research was to have at least 1800 patients who would be alive and actively participating in the study after 2 years. The sample size did achieve a power of 80% to detect a difference of about 5% in visit rates, 20% in hospitalizations rates, and two points in health outcomes as measured by the 0-100 point General Health Rating Index, one of the MOS health outcomes scales. Their goal has been exceeded. Results of the MOS study were reported serially.

The researchers who conducted the MOS felt that a useful approach to thinking about ways to monitor the results of medical care was to begin with outcomes and then to examine variations in both the processes of care and the structural features thought to be the most important in determining those outcomes. The Conceptual Framework was created as a way to do just this. It was useful in the

development of the study design as well as the generation of the major research question. The authors of the MOS believe that the hallmark of their study is its reliance on the broad array of outcome measures, including disease-specific clinical end points as well as generic measures, which include patient-reported health care satisfaction. Additionally they believe emphasis placed on the patient's perspective about the results of medical care is consistent with emerging trends seen in health policy studies.

The MOS conceptual framework defines and determines the major structural, process, and outcome variables that are used to generate the research questions, and explain the findings.

The components of 'Structure of Care' include: System Characteristics, Provider Characteristics, and Patients' Characteristics. The components of 'Process of Care' include: Technical Style (of the setting) and Interpersonal Style (of the health care providers). Lastly, the components of 'Outcomes' included: Clinical End Points, Functional Status (of the patient), General Well-being, and Satisfaction with Care.

The conceptual framework of the MOS is used as the guiding framework for this office-based anesthesia outcomes study. The framework offered a useful approach in thinking about the ways to discover the end results of anesthesia care in the office-based setting by looking at the various components of the structure of care, the process of care that may be most important in understanding the outcomes of care. Additionally, it can be applied that surgical and anesthesia outcomes exist in complex social settings and the more encompassing the assessment of outcomes the more likely to detect consequences to patients of policies that modify the structure of the health care system.

Quality of Care from the Patient's Perspective

Taking patients' perspectives into account is a new twist in medical outcomes research. Studies in the past have focused on predefined attributes in which the respondents have been asked to choose between or rank, which outcomes were most important to them. For instance, Marcario, Weinger, Carney, and Kim (1999) defined a list of outcomes, and then presented them to subjects. Their list came from a computerized literature search using the terms: 'anesthesia', 'outcomes', and 'complications'. The resulting list included items demonstrating a range of severity. No effort was made to evaluate whether such a list encompassed all the salient outcomes experienced by patients. Thus, the study could be incomplete.

Additionally, such a list raises questions about its applicability to office-based settings. For example, recall is a term used to describe what a patient may experience while under a general anesthetic (a rare occurrence). It is when the patient is *believed* to have all the necessary anesthetics administered to them that totally obliterates their consciousness. Rarely, it is discovered during the post-operative interview, patients will be able to describe in detailed account what they heard or felt, or both, during their general anesthetic. In office-based surgery, often times, moderate and/or deep sedation is the technique used. This keeps the patients in a different stage of anesthesia and awareness, while providing comfort, maintaining protective reflexes, and allows for a conscious arousal with verbal or tactile stimulation. Therefore, recall without pain is not something that would be expected and meaningful. The proposed research study on office-based surgery will include the discovering of patient preferences and expectations of care, as well as focusing on both clinical anesthesia outcomes and satisfaction of care outcomes.

Marcario, Weinger, Truong, and Lee (1999) began their study of outcomes not with patients but with expert anesthesiologists. Their goal was to poll a panel of expert anesthesiologists to determine which clinical anesthesia outcomes associated with routine outpatient surgery were judged to occur frequently and to be important to avoid. They found five items with high combined scores; these included incision pain, nausea, vomiting, preoperative anxiety, and discomfort from intravenous insertion. It was felt that quality of care could be improved upon if the providers were able to reduce the incidence of these outcomes. The expert anesthesiologists reached a consensus on which clinical outcomes are common and important to the patient. They did not ask patients to generate their own set of prioritized outcomes based on their own experiences. This speaks to the thought that providers probably know more about the quality of care details, and nothing about patient's sensibilities.

Other researchers also studied patients' sense of outcomes. For example Wilde, Starrin, Larsson and Larsson (1993) used a qualitative grounded theory approach to develop a theoretical understanding of quality of care from a patient perspective.

Thirty-five interviews were conducted with a sample of 20 adult hospitalized patients in a clinic for infectious diseases. In the selection of participants, the authors felt that those who offered a wide variety of experiences such as with infectious disease pathology, constituted a more heterogeneous group than patients in most other acute somatic departments. Patients with varying pathological pictures were categorized into four different groups, and participants were selected by lot.

The data was collected from the interviews that consisted of open-ended questions and covered the following themes: 1) Issues of importance with regard to

the care the patient received, 2) What the patient perceived as positive or negative in connection with the care he or she received, 3) Whether the patient felt anything was lacking during the period of care, and 4) Whether the patient wished to change anything regarding his or her care.

The data was analyzed using a method specific to the grounded theory approach. The result was a creation of a model of quality of care from a patient perspective. The model that was derived from the interview data depicted from the patients' point of view, *quality of care* can be regarded as a number of interrelated dimensions, which taken together form a whole. Within the whole are two core variables, labeled as the 'resource structure of the care organization' and the 'patient's preferences'. The resource structure was determined to be made of up two kinds; person-related and physical and administrative environmental qualities. The patients' preferences was determined to be made of up two kinds also: rationality (the patient striving for order and predictability), and humanity (each expects their own unique situation to be taken into account). The perceptions of quality (patient) are considered from four dimensions; the medical-technical competence of caregivers, the physical-technical conditions of the care organization, the identity-orientation in the attitudes and actions of caregivers, and the socio-cultural atmosphere of the care organization.

This study has implications important to the proposed study in two ways: the appropriateness of purposive sampling as a way to enlist participants who will have the needed information to answer the research questions, and what patient's focus on or find important when they are judging quality of care.

Henderson (1997) studied patient participation with their own care and how their perceptions contribute to satisfaction. Patient participation has many components, including the evaluation of the service received, and/or being consulted on issues of care. Using purposive sampling of patients and nurses from four different hospital settings, data was collected using in-depth interviews and participant observation. Initial interviews encouraged informants to speak freely and recount their experiences regarding their participation in self-care. This was used as a way to assess patient outcomes relative to quality of care. Participant observations for nursing care involved observing the nurse providing care to the patients. From this they identified factors relevant to patient participation from nurses' and patients' perspective. They found that nurses' 'knowing the patient" impacts patient participation. Enhancing factors were identified, such as mutual trust and rapport, a positive nurse/patient attitude, sustained nurse/patient contact, and meaningful interactions. Additionally, inhibiting factors were associated with nurses *not* knowing the patient being treated. Also, other circumstances interfered with patient participation: lack of time on the nurse's behalf, high patient load, negative nurse-patient attitudes, too much task-oriented nursing, and early patient discharge.

The findings demonstrated that in order to provide individualized care valued by the patients, the nurses must get to know their patients. Henderson's study suggests the importance of monitoring patient participation in office-based settings.

Irurita (1998) explored the adult patient's perspective of quality nursing care in acute-care hospital settings in Australia. She studied factors patients' believe influence the delivery of high quality nursing care. She interviewed 23 patients following their discharge from several hospitals as well as collected field notes about

nursing practice and hospital policies and procedures. Factors affecting quality of care were described by the patients, as well as incidents reflecting low quality of care, and conditions that interfered with the quality of care delivered. She found that environmental entities (interesting), as well as organizational factors, types of hospitals where care was delivered (again interesting), coordination and communication, patient information, consistency of caregivers, nurse/patient relationships, and provider technical skills were important influences.

Irurita's findings were expanded by Walker, Brooksby, McInerney, and Taylor (1998) who acknowledge that patient expectations of health care have increased in the last few years, which may be a reason for declines in patient satisfaction. They interviewed 18 recipients of care following discharge from a hospital setting. Three main categories of personal experiences described by the patients emerged: 1) feeling adequately informed, 2) feeling valued as an individual, and 3) feeling at home. In fact, one of the interviewees stated that confidence is earned, and providers who fail to give you the whole story undermine patients' trust in the ability of the provider. Walker, et al, thus make clear that much more than demonstrated technical skill is involved in understanding patient satisfaction and anesthesia outcomes.

Preble, Perlstein, Katsoff-Seidman, O'Connor, and Barash (1993) studied areas of patient contact in an anesthesia department of a traditional hospital. They used their findings to promoted change by increasing patient satisfaction and positive outcomes. They asked patients to rank the care they received on a scale of 1-10 on a survey. Aspects of care included an evaluation of the anesthesia care team interaction with the patients at three different time periods during the peri-operative

process. Although the responses seemed to rate favorable towards satisfaction with care, I wondered how you measure these interactions with only three questions. The fact that the survey does attempt to solicit written comments from the patients, the part I think is valued the most, we do not know the numbers of comments received, or how they were analyzed. Many of the comments appear negatives, which doesn't coincide with the higher percentages of favorable satisfaction score. It may be that it is difficult for patients to put their thoughts on paper. Though limited in scope, Preble et al's findings suggest the importance of assessing quality of care and satisfaction of care from the patient's vantage point.

Rational for an Outcomes-Oriented Approach in Understanding Office-Based Anesthesia Environments

Rosenstein (1997), in a review article addressing outcome management opportunity and objectives, believes that in order to survive in today's competitive health care, providers must be able to effectively manage the inputs and outputs of medical care. Data that describes the end results of the inputs and outputs of medical care is outcomes data. Evaluating outcomes data allows for an assessment of performance outputs related to cost, quality and/or patient impact. Rosenstein found that providers should focus on utilizing outcome assessment as a tool to compare their patients' outcomes with their colleagues' patients' outcomes, as well as identifying opportunities to more effectively manage patient outcomes by improving the processes of care. Indicators that reflect the key components of care should be compared to similar settings and must be able to account for different levels of patient acuity. He suggests that when performing a comparative analysis of outcomes between like institutions, the objective is to focus on meaningful variances

in outcomes of care. This information can be used to identify the potential for institutions to provide more optimal treatment outcomes. Rosenstein cautions that data by itself does not draw conclusions, the analysis of the variations provide the opportunity to see what is appropriate in terms of targets, for improvement opportunities.

What global framework have we worked under in terms of non-clinical outcomes research in the health care community? As Moller (1993) suggested, we have become so good at preventing major anesthesia mishaps in terms of outcomes that maybe the focus should shift towards those aspects of care that promote patient satisfactions. Egger (2000) believes that now, more than ever, staff and physicians need to focus on treating patients as customers. He speaks of growing evidence that physician services will become much more competitive. Data regarding performance obtained from patients that actually enable them to make educated decisions about who they want to provide their care, and I would add 'where' the care should be provided, may be a discussion that will surface. The analogy that is made is the nurse anesthetist competing for a practice opportunity in the office-based setting, as a new setting.

Writing in an editorial in the journal Nutrition, Ashely and Strasser (1997) discuss the patient as a valuable source of outcomes and quality information and they promote the patient as their own advocate for good care. Understandably, the definition of quality care remains under discussion, and shows that patient satisfaction is an important factor of quality of care performances. Providers however, have been reluctant to trust patient's perceptions feeling that patients cannot evaluate aspects of care such as technical and clinical tasks, and maybe

even competencies. Ashley and Strasser counter this with evidence that patients can reliably and validly express their own views on many other dimensions of service and provisions of care, such as perceived quality, accessibility, provider communications skills, etc. In fact, data gathered from the patient are key components in the quality equation. In their editorial, they draw on the National Committee on Quality Assurance, as well as the Joint Commission on Accreditation of Hospitals (JCAHO). Patients were asked not only how satisfied they were with their medical encounters, but also if they felt physically and emotionally improved due to a medical intervention. Though anesthesia is not in and of itself a medical intervention; it remains crucial to both quality of care and patient satisfaction, and post-operative outcomes.

While it remains strategic that we know which 'clinical' outcomes to address and ascertain from recipients of our care, assessing non-clinical outcomes is expected to be used increasingly. According to Kellie (1991), non-clinical outcomes will be used in the clinical practice setting to make treatment decisions; health care managers to evaluate the quality of care; clinical researchers to assess efficacy in clinical trials; health care researchers to assess the effectiveness of existing, as well as new and emerging technologies; payors to frame reimbursement policies; and health policy-makers to inform public policy decisions. Kellie states that the most promising aspect of non-clinical outcomes assessment is its potential for modifying our current perspectives regarding what constitutes effective health care.

Clinical Anesthesia Research in the Office Setting

Very few studies of anesthesia use in office-based surgery exist, and these are very limited in scope. Hoefflin, Bornstein, and Gordon (2000) described the

process and methods for administering anesthesia in their own office-based plastic surgical setting in California. The surgeons in this setting completed 23,000 consecutive 'procedures' in the past 18 years. They found that due to surgical complexities and refinements of both surgical and anesthesia techniques recently, general anesthesia is superior to sedation, in their setting. As in effort to support their own claim about general anesthesia, they offer a detailed step-by-step process that all their patients experience when having general anesthesia in their office.

Though their account is not clear, they claim that general anesthesia was not always an option in past years, and that their positive outcomes reflect the success of all patients receiving a general anesthetic.

The goal of their very lengthy account is to demonstrate to others how they promote positive outcomes. By telling us every step of the surgical and anesthetic process the patient goes through, they then rationalize positive outcomes by stating that they do not have any poor significant results such as: death, stroke, cardiac arrest, heart attacks, pulmonary embolism, aspirations, hypertensive emergencies, liver failure, anaphylaxis, renal failure, equipment failure, malignant hyperthermia, or hospitalization for complications, including seizures. They report that less than 5% of their patients had temporary side effects, such as sore throat, postnasal case sore throat, nausea, complaints of prolonged effects of anesthesia, shivering, recall, intravenous infiltration, broken fillings, thrombophlebitis, or nerve injury or paralysis. The only mention of patient satisfaction by Hoefflin et al, is a statement made that they confirmed the patient's pleasant surgical and anesthetic outcomes with post-operative follow up phone calls or during visits to the office. Satisfaction or quality of

care data from the vantage point of the patient is lacking. This report is claiming patient satisfaction without patient input being verified, making their report suspect.

Additionally, an absence of liver failure, renal failure, and other major morbidities in a patient after plastic surgery in an office setting as a way to claim positive outcomes is not meaningful. It is difficult to place value and find evidence of established trustworthiness in this report.

A few clinical research studies of the office-based settings exist. The majority of these have been carried out to suggest which types of pharmaceutical agents are best and/or result in minimal side effects by the patients. For example, Tan, Chen, White, Wender, Naruse, Kariger, and Sloninsky (1999) evaluated the effect of nitrous oxide (an inhalational anesthetic often thought to contribute to post-operative nausea and vomiting, although this remains controversial) on the recovery profile, including the incidence of post-operative nausea and vomiting after office-based surgery was performed using propofol-based anesthesia. The authors of this research acknowledge that a goal of office-based anesthesia is to facilitate and expedite recovery and discharge. They state that post-operative nausea and vomiting can delay patient recovery and discharge, as well as decrease patient satisfaction. Propofol anesthesia is an anesthetic associated with rapid wake up and recovery; is expensive, and frequently used in outpatient procedures. It is administered intravenously. If nitrous oxide lessens the requirements of propofol anesthesia in terms of amount used and without contributing to nausea, it may be a cost-effective technique in this setting. The clinical trial included selecting patients having surgical procedures lasting 15-45 minutes, because the incidence of post-operative nausea and vomiting is increased when procedures are lengthy. The data collected was

appropriate for the research; the statistical analysis reported accordingly. The findings support the fact that for shorter surgical procedures performed in the office setting, the administration of nitrous oxide decreased the anesthetic requirements of propofol, without increasing the incidence of post-operative nausea and vomiting.

Tang, White, Wender, Naruse, Kariger, Sloninsky, Karelan, Uyeda, Karlan, Reichman, and Whetstone (2000) carried out similar research in office-based settings. In this randomized clinical trial, they compared propofol/nitrous oxide anesthesia with desflurane/nitrous oxide anesthesia with a regime of anti-emetic prophylaxis, to assess for variables in the recovery profile conducive to timely discharge from the office-based setting. There were no significant differences in the demographic profiles between the two groups and only those patients who had short, minimally invasive surgical procedures were studied. Reducing post-operative nausea and vomiting is important because such sequelae can delay an office-based discharge and hinder the efficiency of the process, as well as cause patient dissatisfaction. They found that desflurane/nitrous oxide inhalational anesthesia combined with anti-emetics reduced post-operative nausea and vomiting to a level comparable to propofol/nitrous oxide anesthesia after office-based anesthesia.

Summary

The conceptual framework used to drive the MOS offers an approach to monitor the results of medical care. It begins with outcomes and then examines variations in both the process of care and the structural features within the system thought to be most important in determining those outcomes. By assessing the characteristics of a health system, provider characteristics, patient characteristics, technical style of the system, and interpersonal style of the providers, satisfaction

with care is one key outcome that can be explained. No research has been conducted that works within this framework to discover the outcomes of care for patients undergoing office surgery and office anesthesia, thus policy-makers must depend on what they are *told* occurs in this environment and how things can be improved.

By looking at a broad array of outcome measures in addition to clinical outcomes, and placing an emphasis on the patient's perspective of quality care and satisfaction with care, the discoveries made can improve patients' satisfaction, address quality care, and offer legitimate data which is currently lacking, to guide policy-makers in rational decision-making.

Using ethnography is one approach to discover the unknowns of office-based surgical settings. It can be used as the beginning step to discover outcomes of care in the office-setting, as well as how these relate to the structures of care and process of care, as in the MOS conceptual framework. Ethnography assumes that we must first discover what people actually do and the reasons they give for doing it, before we can assign to their actions interpretations drawn from our professional disciplines (LeCompte & Schensul, 1999). They list the characteristics that mark a study as ethnographic: research carried out in a natural setting that involves fact-to-face interactions with participants, it presents an accurate reflections of participants perspectives, it uses inductive and interactive data collection and analytic strategies to build local cultural theories, it uses multiple data sources, it frames all human behavior within a sociopolitical context, and it uses the concept of culture as a lens through which to interpret the results.

Conducting ethnographic research and collecting qualitative data is the method that will be used to answer the three research questions posed in this study. They are: 1) What is going on in the office-based surgical settings in Michigan with anesthesia delivery by the nurse anesthetist, 2) What are all the roles of the nurse anesthetist in the settings, and 3) What sense do the patients make of this?

CHAPTER THREE

METHODS

Introduction

Despite increasing numbers and types of office-based surgical procedures all with anesthesia delivery, we know little about what happens here, the evolving roles of the nurse anesthetists, and what patients make of these events (including outcomes of care). This chapter details the research methods used in this study to answer to these questions.

A "scientific method" is an approach that incorporates procedures that scientists' have used, or may use in the future, to pursue knowledge. This open definition includes quantitative research, qualitative research, and outcomes research (Burns and Grove, 1997). While quantitative research focuses on the systematic process in which numerical data are utilized to obtain information about the world, and qualitative research is the systematic approach to describe life experiences and give them meanings, they do have commonalities. They require researcher expertise, involve rigor in implementation and result in the generation of new knowledge. The broad definition of scientific method supports the belief that there is more that one way to conduct research and the problem area to be studied should be the driving force as to the type of research to conduct.

Qualitative and quantitative research methods complement each other because they generate different kinds of knowledge that are useful in many health-care disciplines. According to Morse and Field (1995), qualitative research enables us to make sense of reality, to describe and explain the social world, and to develop

explanatory models and theories. While many of the characteristics of both types of research are similar, qualitative research is usually conducted to explore complex situations where little is known. These research methods are useful and appropriate when the research questions pertain to understanding or describing a particular phenomenon or event that remains obscure. Office-based surgery is such a situation, especially understanding anesthesia delivery itself, and patients' perspectives of the event.

Research Paradigms

All research, qualitative, quantitative, and the relatively new methodology used to generate knowledge for clinical practice called outcomes research, is informed by particular world-views or perspectives held by the researcher and scholars within his or her discipline (LeCompte & Schensul, 1999). These perspectives are called paradigms. This is a way of seeing the world and interpreting what is viewed, and deciding which of the things seen are real, legitimate, and important to substantiate. There are several research paradigms; and researchers make use of these approaches based on their research questions, personal preferences, and the needs of the research setting.

There are several different paradigms in social science research and evaluation; the most common ones include positivism (the oldest); critical theory; interpretative, phenomenological, or constructive theory; ecological theory; and social network theory. It is not unusual for a researcher to acquire a perspective on how they think and write about a culture combining several paradigms. LeCompte & Schensul (1999) describe each of these paradigms.

The positivist paradigm employs both qualitative and quantitative data and assumes a distinct conceptual and social separation between the researcher's influence and the object or events being studied. Positivists believe that the research methods they use can and should be neutral and value free. The goals of positivist approaches are to generalize the results to similar events and phenomena, and to develop universal laws that govern human behavior in all settings.

Critical theorists are interested in how the history and political economy of a nation, state, or other system exert direct or indirect domination over the political, economic, social, and cultural expressions of citizens or residents. They are especially interested in the experiences of minority groups. In this paradigm, scientists function as advocates and activists. They use the tools of research to discover inequities and to find ways to bring about change in otherwise inequitable distributions of power, cultural assets, and other resources.

Researchers in the interpretative, phenomenological or constructivist paradigm focus on the social construction of reality, or what people know and believe to be true about how the world is constructed—or made up—as people interact with one another in specific social settings over time. They base their approach on perceptual views of reality. Unlike the positivists, who anticipate a single reality best represented in a probabilistic sense, social constructivists believe that individuals and groups are more or less informed and/or sophisticated, rather than more or less true in the absolute sense. Constructs in this paradigm or reality, are not fixed; they can be altered over time and can lead to new constructions or views of reality and new ways of acting. Interpretivists strive to present complex accounts or stories, told in the voices of many people with different perspectives. Their approaches to data

collection are participatory because they believe meaning can only be created through interaction.

Researchers in the ecological paradigm view individuals as functioning in a social context, one that influences their behaviors. The social context consists of the human and physical environment in which events take place and includes social levels and sectors. These researchers see the levels and sectors within communities as systematically relating to and affecting one another. They believe that change should be introduced in all levels or sectors simultaneously. Additionally those who work within this paradigm are guided by research that identifies contextual elements with the chief focus on individual or institutional behavior. Unlike critical theorists though, ecologists have few preconceived ideas about the priority of these elements.

The social network paradigm is an emerging paradigm; however, it provides an important analytic framework for social science research. Social science research has recently been used across disciplines. The social network paradigm combines the work of theorists who are concerned with the movements of innovations through social systems. For instance, epidemiologists and disease prevention researchers who are all concerned with improving the transmission of information work within this paradigm. Social network researchers are interested in natural groupings defined ethnographically or descriptively through observations in the field.

Uncovering the Mysteries of Office-Based Anesthesia

In order to understand what is happening in the office-based surgical environment, the role of the nurse anesthetists there, what patients make of having

surgery and anesthesia in this environment, I took a primarily interpretative approach.

The interpretive paradigm (the term interpretive refers to all three: interpretative, phenomenological, or constructivist paradigm) was crucial in terms of the social construction of reality occurring among participants in this setting. The approach and understanding that what people know and believe to be true about the office setting as they interact with others over time fits my research interests. The recipients of care in the setting are affected by the social, political, cultural, economic, and possibly other unrealized characteristics that embrace them. This seemed to fit my research goals of understanding outcomes of care within the office-based setting: (a) are no 'abstracted from perceptions' notions of good outcomes, (b) a natural setting is assessed, (c) the focus is on perceptions, (d) requires melding perceptions of various actors, i.e. physicians, nurse anesthetists, and patients, (e) that melding gets accomplished in social interaction, and (f) allows understanding of how identical results could be perceived to be good outcomes from perspective of the doctors, but bad outcomes from perspective of the patient. Because so little is known about the events of office-based surgery with anesthesia delivery, we need to case a wide net and look NOT for central tendencies, but a range of variety.

A Naturalistic Approach

Understanding office-based surgery with anesthesia as it occurs in everyday practices requires a naturalistic approach, the central research method in cultural anthropology and sociology disciplines where it has a long history. Above all else, naturalistic inquiry demands immersion in the site under study. Furthermore, this study fused components of two naturalistic approaches, ethnography (a holistic

sense of the culture of the office) and phenomenology (achieving conceptual description of the features of the lived experience from the recipients of care).

Ethnography, according to LeCompte and Schensul (1999), is an approach to learning about the social and cultural life of communities, institutions, and other settings. It is scientific and investigative, uses the researcher as the primary tool of data collection, and employs rigorous research methods and data-collection techniques to avoid bias and ensure adequacy of data. Additionally, it emphasizes and builds on the perspectives of the people in the research setting, is inductive, and builds on local theories. With ethnography, one must first discover what people actually do and the reasons they give for doing them to interpret reality. The primary modes for data collect-participant observation and interviews with those observed-provide the basis for understanding how things are done, while discovering meanings that people attribute to what they make and do. Ethnographers desire little control over what happens in the field situation because the central goal is to discover what happens, in all its rich and complicated variety.

Phenomenology is a research approach that focuses on the meaning of the "lived experience" (Morse and Field, 1999). The intentions are to examine and describe phenomena as they are understood in the lived experience of the individuals. Phenomenology is the method of choice when pursuing to understand, make sense, and elicit, the meaning of a phenomenon. The purpose of phenomenology is to describe the essence of behavior in order to promote human understanding; the goal for the researcher is to provide an accurate description of the event being studied and not to generate theories.

I drew from the components of ethnography in order to understand the everyday occurrences and practices of the office-based setting specific to anesthesia delivery. It is recognized though that this research is not as all-encompassing as a typical 'culture' usually studied by ethnographers. While seeking to discover what sense the patients made of having surgery with anesthesia delivery in the office based setting, phenomenology is the naturalistic research approach used. This seemed fitting when trying to understand the opinions and attitudes of the patients who went through the experience of office-based anesthesia. The fusion of these two methods allowed me to develop a plan to generate a qualitative data set that would answer the three research questions posed in this study. Also, there is a potential to lay groundwork for a broader survey outcomes research in the future based on the findings of this study.

Selecting the Research Site

According to Spradley (1980), locating a social situation is the first step in doing naturalistic research. I set out to find offices meeting several criteria: ones that would allow me access, locale within 60 miles of the Detroit Metropolitan area, sites that were in compliance with the descriptions/purposes of offices in the Michigan Administrative Rules, and anesthesia delivery was by a Certified Registered Nurse Anesthetist.

Through discussions with colleagues, it became clear that plastic surgery, dental surgery, and urology surgical services predominate in the Greater Detroit Metropolitan area in Michigan. In the offices where nurse anesthetists provide anesthesia services for most of the surgical services, I found that the types of

surgeries performed warranted an anesthetic regime that ranged from light sedation to general anesthesia. This allowed studying nurse anesthetists in varied roles.

Gaining access to the offices of surgeons in all three disciplines guaranteed a range of anesthesia services due to variations in the surgical procedures. To gain access, I simply asked for an opportunity to present my research, did so, and subsequently was allowed access to five offices: two plastic surgeons, two dentists, and one urology office. In this way, I am not trying to make claims about all office-based surgical settings, or generalize to all office-based settings, but rather to discover what is occurring in three rather diverse areas of medical practice.

Selection of Patient Participants

I began the study hoping to locate four patients per site who would agree to being interviewed about their office-based surgical and anesthetic experiences. However, due to the inability to reach all patients post-operatively who consented to participate, as well as unexpected case cancellations, six patients were interviewed from the first plastic surgeon's office, four from the second plastic surgeon's office, six from the urology office, and three dental patients from two different dentist offices.

Data Collection Strategies

Data collection proceeded using participation observation in the office-based surgical environment and semi-structured, in-depth interviews with the patient. Additionally, a researcher notebook was kept to record data discovered during participation observation. Within this notebook, I included a personal journal, which included handwritten notes of my own actions, feelings, and hunches. Additionally, artifacts such as information pamphlets and copies of pre-operative anesthesia instructions and information given to the patients from each specific office (as listed

in Appendix A), as well as emails between myself, and the health-care providers, supplemented my understanding of these settings. Medical records of the patients who were interviewed were reviewed, and demographic as well as anesthetic data on each participant was recorded on a data sheet developed by this researcher (see Appendix B).

Participation observation was used to capture the surgical and anesthetic event as it transpired, to discover and understand what goes on in these settings, including the roles of the nurse anesthetists (Spradley, 1980).

When I started the project, I did not know exactly how long it would take to gain an understanding of what occurs in each office. I used the first office as a starting point, and discovered that it varied.

Following Spradley's (1980) developmental research sequence, a systematic approach to anthropological fieldwork, I engaged in participant observation and followed the sequence of steps suggested in this method. On the initial visit, I began with descriptive observations, especially a grand tour as the nurse anesthetist or the surgeon showed me around the office. I recorded details about the three major features in each office setting: the place, the actors, and the activities.

Following grand tour observations, I made what Spradley (1980) referred to as mini-tour questions that deal with a smaller unit of experience. I recorded these by hand in my fieldwork notebook. They included questions such as: what are all the ways that anesthesia is delivered in this office? And what are all the duties of the nurse anesthetist in the office? I answered these grand tour and mini-tour questions not only during my visits to each office, but also via email, phone conversations, and

one-on-one interactions with participants outside of the office setting. I recorded this information in my notebook also.

Each site was entered with the intent of discovering what goes on specifically in this setting related to anesthesia care. This was completed by making focused observations. Focused observations are based on structural questions, such as what are all the stages of the surgical process that a patient goes through in the operative setting? And what are all the stages of anesthesia care delivered by the nurse anesthetists? These observations were recorded by hand in the fieldwork notebook within 24 hours following the observation.

The level of my participation varied depending on the circumstances of the particular situation. For instance, I usually engaged in moderate participation, other times, especially in the second plastic surgeon's office, I practiced taking a fly-on-the- wall stance, and simply observed what happened. On a few occasions, specifically in the first plastic surgeon's office and the dental offices, I offered to set up the anesthesia equipment and/or supplies needed for surgery. During this time I also observed what others were doing and made mental notes which I later recorded by hand in the notebook. Several times, I sat with nurse anesthetists as they interacted with the patients preoperatively, followed the patients into surgery and placed monitors, and stayed with the patients in the surgical setting and interacted with the providers during surgery. At some surgical settings, and where it was appropriate, I conversed with health-care providers during surgery, as a way to conduct informal interviews with the nurse anesthetists and surgeons. I escorted all of the dental patients (because I could and my help was wanted) to their car. I had approximately two opportunities to provide minimal relief work when the nurse

anesthetist had to leave the room and I took over during surgery, a typical practice among CRNAs.

Interviews

While participation observation represents one lens on what happens in office-based surgery with anesthesia delivery, interviews with patients provide insight into what patients make of what happens there. Following Taylor and Bogdan (1998), Spradley (1980), and LeCompte and Schensul (1999), in-depth, semi-structured interviews were conducted with patients who had anesthesia in the office setting. The approach of the interviews was flexible and dynamic to the extent it could be. Patients were prompted to describe sequence of events as they were experienced specifically related to their anesthetic, their "lived experience." Doing so allowed exploration into aspects of care that contributed to satisfaction and dissatisfaction from the patient's vantage point (see Appendix C for the interview protocol used).

Nineteen patients total participated in an interview process: six patients from the first plastic surgery office, four from the second plastic surgery office, six from the urology surgery setting, and three from two different dental offices. (Four patients who consented to be interviewed by telephone were dropped from the research after several tries). The first three interviews were conducted in person at the first plastic surgical office setting; the remainder of the interviews were conducted by phone. Each interview took place approximately one week after surgery; one interview took place the day after surgery due to patient preference. The interviews lasted from 30 – 90 minutes.

Due to preferences of health-care providers, my involvement with patients' surgical procedures varied. I was present for all of the surgical procedures performed on those patients interviewed, except for those in the first plastic surgical office. I was in the operating room for all the dental procedures; for the remainder of the procedures during the actual surgery, I remained just outside the operating room door. I had access to those who were interviewed at all other times during the peri-operative process (the entire surgical process that includes the preoperative time, the operative time, and the post-operative time).

Anonymity was maintained for the research sites, medical personnel, and patients. Identifiable features of each office setting were masked and pseudonyms were used for all participants in the findings. Institutional Review Board approval was gained before entering any site (See Appendix D).

Data Analysis

Spradley's (1980) developmental research sequence guided the data analysis for this research. The central focus of this method is to learn from people in an everyday social setting, to understand how they make sense of their world. Thus analysis in this tradition proceeds inductively and searches for patterns in the behaviors of, and interactions between and among, participants in the setting. Spradley suggests three distinct forms of analysis: domain analysis, taxonomic analysis, and componential analysis.

Domain analyses are ways to discover cultural patterns in a social situation. According to Spradley, culture is an organization of things, and refers to the shared meanings given to people, objects, places and activities. Thus, cultural or semantic domain analysis allows for the discovery of the cultural meaning of behavior, a

community's shared understandings of everyday practices. Cultural domains are, therefore, categories of meaning. Domain analysis is a systematic procedure for organizing categories of meaning elicited from insiders. For instance, X are all the ways patients describe being satisfied with anesthesia care.

Domain analysis was carried out in two stages, the first used the participant observation field notes (included here are field notes, journal notes, artifacts gathered from the offices, and emails from various providers), specific to descriptions of what went on in the office based setting and the second, employed those field notes pertaining to the role of the nurse anesthetist. I completed the analysis in a sequential basis moving from the first office setting to the fifth. I addressed the first research question for each site and then addressed the second research question for each site.

For the interview data, domain analysis was completed from each transcribed interview within sites. I also included the demographic data from the field notes in this analysis (more artifacts), for verification and clarity purposes. I organized this task in a step-by-step fashion in order in which the questions were asked to each participant.

Taxonomic analysis allows the researcher to go deeper into the investigations of cultural domains by finding out how they are organized. The goals can be the discovering of categories of behavior that are themselves systematically organized, or that the domain discovered is part of a much larger domain. This type of analysis guides the understanding, the how cultural meanings "hang together," especially ways domains are organized and related to one another.

Componential analysis is a way to discover contrasts that exist within cultural domains, a systematic search for characteristics associated with cultural categories. For instance, in my case, I wondered if patient satisfaction varied across patients within a surgical office and/or across surgery offices. As such, componential analysis offers a way to understand systematic differences in perceptions across groups and sites and is central to developing understanding about variations in findings.

Trustworthiness

One of the central concerns of all researchers is understanding the extent to which research findings can make claims to know. While positivist research depends on experimental methods that minimize the numbers of things going on, or as some would call control of variance, post-structuralist research depends on naturalistic methods that try to make as few simplifications of everyday real-world events as possible. While naturalistic methods are complex, they are more likely to be representative of real-life situations and offer important information about the world that cannot be obtained via experiments. Both positivist and post-structuralist research is scientific, but there are differences in the criteria used to measure research quality, i.e. trustworthiness. Naturalistic research uses criteria such as credibility, transferability, dependability, and confirmability to establish and measure trustworthiness. These four parallel internal validity, external validity, reliability, and objectivity in positivist research.

Credibility ensures that the findings represent what is going on and are not merely the researcher's pre-conceived notions. Lincoln and Guba (1985) suggest specific activities that will increase the probability that credible findings will be

produced: prolonged engagement, persistent observation, triangulation, peer debriefing, negative case analysis, referential adequacy, and member checks.

Via prolonged engagement the researcher invests a sufficient amount of time to assure that what they are seeing happens routinely and is not just for the researcher's benefit. There has to be time to learn the culture, test for misinformation introduced by distortions from the researchers or the research subjects, and a sufficient opportunity to build trust within the setting. I was welcomed to all offices and patients readily agreed to participate. My access was not limited in offices and folks went about their work as if I were not present. For one particular office (the first plastic surgeon's office), I had established a long relationship in terms of being allowed in for any period of time that I needed for this research. Every office invited me back whenever I felt I needed to be present and I often took them up on the offer for the purpose of taking more field notes. I did not have to "phone ahead" but could just show up; this suggests strongly that there was no preparation for my subsequent visits. During these follow-up visits, I witnessed the administration of the anesthetics, read patient charts, made verbal inquiries about the nature of everyone's tasks, or simply observed quietly. As such, my fieldwork meets the requirements of persistent observation.

Triangulation is another mode of improving the probability that the findings and interpretations will be found credible. This is done by using multiple and different sources to obtain data, using different methods of gathering the data, and having more than one investigator collect the data. The multiple sources I have used to obtain the qualitative data that attempt to answer the research questions are:

1) I have accessed three different areas of medical practice

2) I have interviewed several patients from each office and/or area of medical practice
3) I have formally interviewed the recipients of the medical care, and informally interviewed some of the care providers
4) Data sources, in addition to the interviews, include field notes from participation observation, data obtained from the medical record, artifacts gathered from each office, as well as e-mail from various providers within several of the offices

With this information, I corroborated across the various sites, patients, providers, and data sets.

Peer debriefing, periodically seeking feedback on ones' research from a colleague, helps researchers double-check their thought processes. During this study, I shared findings and research dilemmas informally with a CRNA colleague also trained in qualitative research. These were also bolstered by negative case analysis—repeated readings of the data and re-contacting physicians and nurse anesthetists—to rule out competing hypotheses. Unfortunately, member checks with patients could not be performed because my contact ended with their interviews. However, their substantially larger numbers (relative to physicians and CRNAs) and the extensive data gathered during interviews as well as their frank and open responses, improves the chances of my seeing from their vantage point, and not being biased as a CRNA myself.

By selecting office-based surgery settings typical of those in Southeast Michigan and by describing the settings carefully, I provided the sort of rich,

descriptive information needed for others to reach their own conclusion about transferring my findings to other sites.

Dependability refers to the extent to which repeating this study in the same place would find the same results. This is produced by careful research design, especially data collection and analysis strategies. I collected data via varying degrees of participant-observation levels in the same way and in similar proportions for each setting. I consistently recorded findings for similar components of the setting and watched for similar and inconsistent patterns in the process of care as the patient moved through surgical processes. I interviewed the patients in the same manner, in the same time frame after their surgery, and used the same prompts to allow patients to expound on their thoughts. I completed data analysis in the same manner for each data set (each office setting) and for each set of verbatim-transcribed interviews.

Confirmability of this study was established by demonstrating that the findings were grounded in the data; this is achieved with audit trail linkages allowing a knowledgeable researcher to follow from data to analysis to reporting. For example, data analysis worksheets, reference field notes, interviews, or other sources of data, and these are cited in the research report. Additionally, I met with my faculty advisor to present the preliminary findings. My advisor had access to examples of raw data, analysis worksheets and findings, and provided a preliminary confirmability audit.

As will become obvious in the findings, doing research in office-based surgery anesthesia settings required not only my being a CRNA, but also my maintaining neutrality and not becoming merely a "cheerleader" for these sites of anesthesia delivery. On the one hand, my professional expertise gave me access to

important arenas, diminished my impact on the site, and guided my gathering data important to documenting what happened in the site. On the other hand, I maintained researcher distance (and did not "go native") by continuously attending to writing descriptive, and not on the fly interpreted, field-notes. I kept a researcher journal to help me appreciate how I reacted to the settings, as well as to document my thoughts about the research. When in doubt about the ways research participants understood events (and to be sure I was not dependent solely on my own understandings), I conversed with participants or returned to data sources to guarantee seeing from the vantage points of participants. In these ways, I established neutrality central to research practice.

Limitations of this study exist and include the fact that I am the only investigator for this research project. The use of multiple researchers enhances credibility by keeping team members honest about what they have discovered. However, as a doctoral dissertation, this cannot be accomplished.

Now let us turn to the world of anesthesia delivery in office-based surgery: 1) What is transpiring in the office-based surgical environment? 2) What are the roles of the nurse anesthetists in these settings? and, 3) What sense do the patients make of all of this?

CHAPTER 4

DATA ANALYSIS AND FINDINGS

In the last decades of the twentieth century, health care within the United States has undergone an evolution. Due to advances in the health care disciplines and associated technology, including advances in anesthesia, pharmacology, and drug delivery systems; ambulatory surgery experienced an explosive growth. It was no longer always necessary or appropriate to include a hospital admission as part of the surgical process. Much of the same surgical care could be provided for patients in an ambulatory fashion, and be much more cost effective and conducive to meeting all the needs of the patients with minimal disruption in their lives.

The concept of ambulatory (also known as out-patient) surgery led to the development of freestanding surgical centers. These surgical centers were built to facilitate the out-patient surgical process. They offered a new and different locale for surgery, and contributed to more ambulatory procedures being performed than allowed within the hospitals. In many ways they are just like hospitals but without the capabilities for an over-night stay by the patient. Some ambulatory surgery facilities are linked administratively to larger hospitals as affiliate centers, and often times the physicians are required to follow the same administrative policies and procedures as the affiliate hospitals. It is not uncommon to see ambulatory surgery facilities house ancillary and support departments such as radiology, laboratory testing, and electrocardiography. They are neither capable nor intended to allow the performance of high acuity complex surgical procedures; it remains appropriate and safe to perform these procedures in the hospital with maximal resources.

As the concept of ambulatory surgery continued to grow, surgeons decided to take an even greater leap, and progressed to looking at their actual offices as additional sites where low acuity surgical procedures could be performed. This was anticipated to allow for greater control of costs for the surgeon themselves, as well as for the patient. Many of the perceived inefficiencies of the ambulatory surgical process that were imposed upon the surgeon could be diminished if they had greater control of the process itself.

This marked the advent of what is now called office-based surgery and of anesthesia delivery in such settings. Within the office confines, physicians took the initiative to construct and develop rooms solely for the purpose of surgery. It was concurrently realized that surgery could not be performed safely, even surgery of low-magnitude, without provisions for anesthesia care. This led to turf battles between the nurse anesthetists and the physician anesthetists. Oftentimes the physicians did not want to perform the anesthesia care themselves, but felt that only physician anesthetists could provide safe care or quality care over-sight. In many states, legislative and regulatory bodies began to take an interest in control of what happens in these settings. Surgeons, physician anesthetists, and nurse anesthetists participated, from their various vantage points, in developing the emerging legislation. This power struggle continues today.

Simultaneously, the onus to meet the demands of this rapidly growing concept became a reality for providers, and an understanding of all that occurs in this setting relative to quality of care, safety, and patient satisfaction in terms of self-reported outcomes became crucial. Much of this remains unreported and this research was carried out to discover what is going on relative to surgical and

anesthesia services in a few select Michigan offices, what the roles of the nurse anesthetists are in the office surgical setting, and what sense the patients make of having surgery and anesthesia in a physician's office. The following findings are the results of the research questions posed in the previous chapter.

Office Surgery in Michigan

The offices studied are typical of those in southeast Michigan and were chosen from among plastic surgeons, urologists, and dentists who provide surgical services in office settings. They are freestanding facilities; i.e. not physically connected to hospitals, which is also common, and they function as defined in the Michigan Administrative Rules (not dedicated solely for the purpose of performing surgery, but do so as a portion of care provided). The rooms dedicated to surgery resemble and have many of the same features as hospital operating rooms such as traditional operating room tables, surgical equipment and supplies, and of course provisions for the administration of anesthesia. Most surgeries performed are considered low magnitude, minimally invasive, and not for major organ removal or repair. Coupled with these surgical services are anesthesia services provided by Certified Registered Nurse Anesthetists.

The Environment in the Office Setting: Unusual or What We Would Expect?

What might a typical hospital surgery facility be like? Drawing on personal experiences, operating rooms are generally fear-inducing for the patient for a variety of reasons. Typically, one undergoes surgery because something needs to be removed, repaired, reconstructed, or diagnosed. Operating rooms are known as sterile green environments with bright lights, stainless steel, and masked individuals without faces. Patients often tell us that they are chilled to the bone when we wheel

them into the surgical suite, due to the external temperature of the room. By the time a patient enters an operating room in a hospital or an ambulatory surgery facility, they have already met a dozen or more people who will be caring for them. For many it is an overwhelming experience, even if the surgery is elective. It is common for those who enter into a health care surgical setting to have been told they must arrive two hours early. If the hospital is big, they have to find a place to park, and actually find where in the hospital the surgery department is. Employees are instructed to direct those who look lost. Time must be allotted to move through the insurance verification or payment process, the authorization process and the pre-operative process. Once in the pre-operative holding area, everyone has to verify, interview, auscultate, question, look, and check. Care providers obtain needed information the chart, approach patients and address them by name. They may come back to the patient in the holding area, and have to look again at the chart, because they do not remember the patient's name.

Notice that office-based surgery sites share some of these features but not others:

> A plastic surgeon's office (field notes, 5-1-01, pp. 1-2)
>
> I pulled my car into a rather small parking lot that holds maybe 15 cars, but only a handful of spots are taken. I am able to park about 10 steps from the front door of the physician's office. The office itself is a red-bricked building and sits on rather well manicured and beautifully landscaped surroundings. Total square footage looks to be about 3,000. The windows shine in the sun glaring down on them. White paint trims the door. I walk directly into the waiting area. It smells fresh, fragrant like a mild flower, not strong and medicinal. There are large oil paintings of beautiful people on the walls; the frames are gold with detailed carvings. A large wood table is up against the wall that faces the entrance. It has brochures, artistically done, of those who provide care for you in this setting. Next to the brochures are face creams, suntan lotions; items to make you feel good about yourself. The office has beautiful furniture in it; couches and chairs; the décor emphasizes colors of green and peach. It is warm and inviting. Soft plush carpet is beneath my

feet. Magazines neatly placed on a wooden coffee table. It feels like I am in a living room, except for a glass window where a receptionist is sitting. She is there to greet patients as they arrive. The rules of the office are that you arrive when they inform you to be present, and you are only in this room for no longer than 10 minutes before a member of the office staff escorts you into a pre-operative consultation room. In this preoperative consultation room, and there are three such rooms, is a leather reclining chair, a sink with a mirror, white cloth robes to change into, magazines, the same soothing colors as the waiting room. The surgeon enters within moments of patient arrival. Here is where he completes any additional assessments just prior to going into surgery. Here is also where the nurse anesthetist meets you for the first time, and he will perform any necessary duties prior to walking patients into the operating room.
The walk to the operating room takes less than a minute. The floor is carpeted en route. The operating room itself has gray colored tiles. There is an operating room table, leather, with appropriate standard blue drapes/coverings. The room is rather small. One wall has cupboards that store supplies and equipment. At the head of the operating room table, is an anesthesia gas delivery machine. It is rather big, and right next to this is a huge green oxygen tank. There is an additional table at the head of the bed with anesthesia medications and more supplies. In the corner on the shelf is emergency equipment is discretely placed. At the foot of the table is another table, covered in standard blue drapes, with sterile surgical equipment on top of it. There are three people in the room, the patient, the anesthetist, and a surgical technician at this time.

A urologist office (field notes, 11-2-01, pp. 50-59)

It has some contrasting features compared to a plastic surgeon's office. Here, the parking lot is a little bigger, flat and open, but encircles a huge, multi-floor, contemporary and architecturally designed office building. The landscape is impeccable. The walk to the entrance may be a little longer depending on where you park. When I entered this rather large building, I note a security officer is seated behind a desk in the atrium. There are elevators behind him, and the atrium is designed with artificial trees. Immediately to the right, on the first floor, is a door with a sign to the right of it. The surgeons who practice out of this office have their names on the sign. Through the door to the right is an open reception area with three women sitting behind a half wall. A few are talking on the phone. One is present to greet the patients. There are files, medical records, and behind these women are shelving units from floor to ceiling. To the left is a waiting room. Soothing gray and cranberry colors are noticed. There are enough chairs for twenty or so people. There are pamphlets, brochures, and magazines for perusal. There are maybe five people sitting in the chairs, although there seems to be a steady stream of people coming and going. One gets the impression of the typical hustle and bustle of a rather busy office of a physician. The average wait after check in, and until the nurse comes to get a patient for surgery, is no longer than 15 minutes. The registered nurse, the same one works for

one surgeon, comes to the waiting area to escort the patients who are having surgery into a very small changing room, and then into the room for surgery. From the waiting room to the changing room is a moderate walk down a carpeted hallway, maybe thirty or so feet. Many offices are to the right and left of this hallway. The surgery room itself is also small, approximately 12 by 12 feet. In the center of the room is a leather operating room reclining type table, stirrups off to the side, and blue standard hospital drapes cover the bottom half of the table. There is no anesthesia gas delivery machine in this room, just a series of box like monitors on tables, at the head of the table. There are cupboards and a shelf to the right, and the anesthesia medications and supplies are on the shelf. There is a small table at the foot of the bed with a stainless steel basin and a few surgical pieces of equipment.

First dental office (field notes, 12-7-01, pp. 16-22)

This dental office is in the middle of residential subdivision, and it is actually a house converted into a dental office. There are three separate rooms where the dentists treat the patients, and one room is built for those patients who are having anesthesia while the dentist is caring for them. Unless anesthesia is going to be delivered in this room, there is no anesthesia equipment visible. In other words, the nurse anesthetist who provides care in this office brings all her equipment with her. She is a traveling mobile anesthesia provider. The dentist built her, for her monitoring equipment and supplies, a shelving unit that she assembles when she arrives, and disassembles when she departs.

Second dental office (field notes, 12-12-01, page 65-70)

Appeared more like an office on the outside; it actually resembled what most would associate as resembling a physician's/dentist office. It is not a converted house. But unique to this office, in the room where anesthesia is delivered, sits what is typical of stationary monitoring anesthesia modalities, it appears to resemble a large anesthesia delivery system, but it is not, just the monitors on top of a blue stainless supply cart. One doesn't usually see automated blood pressure machines, and other rather large anesthesia monitoring devices like these in a dental office. There are H tanks of oxygen in a storage area, and oxygen in the room drawn from these large H tanks.

Thus, office-bases settings have a very different "feel" when compared to hospital surgery settings.

Certified Registered Nurse Anesthetists

Anesthesia care is provided by Certified Registered Nurse Anesthetists in these offices. A Certified Registered Nurse Anesthetist is a registered nurse who is

educationally prepared at a graduate level, and competent to engage in the practice of nurse anesthesiology (Jordan & Foster, 1994). They are responsible and accountable for their own professional practice and are capable of exercising independent judgment within their scope of competence and licensure. This duty or task of exercising independent judgment is a part of what makes nurse anesthetists want to work alone as the sole anesthesia provider in the office-based setting. A nurse anesthetists who administer anesthesia in the office settings, when asked what does he like about practicing as the sole anesthesia provider in the office, responded with: "I am the one who is the expert here, the surgeons depend on me to be the expert in anesthesia, and I don't have anyone else telling me what is best, and then leaving the room" (field notes, 6-4-01, pp. 5).

Nurse anesthesia practice is different in many regards in the office setting compared to nurse anesthesia practice in the anesthesia care team setting that is the norm in many of the hospitals in the Detroit Metropolitan area. The anesthesia care team is made up of nurse anesthetists and physician anesthesiologists. The nurses work administering anesthesia to the patients, and function under the medical direction of the physician anesthetist, who oversees the anesthesia care simultaneously occurring in up to four operating rooms. In office-based settings, nurse anesthetists are the anesthesia care provider and they work in a collaborative relationship with the surgeon or dentist, and not under the supervision of a physician anesthetist. All the anesthetists that participated in this study are extremely satisfied with their practice, demonstrated positive relationships with the surgeons, and did not reveal any work-related frustrations, something that is not always the case in hospitals. Office-based nurse anesthetists described what they liked about their

practice: "the ability to provide quality care," "tailor explanations to the patient," "be safe," "be respected," "be independent," "respect the surgeon" (field notes, 10-11-01, pp. 11 and 12-7-01, pp. 16-17).

Each of the nurse anesthetists introduced themselves to patients as the nurse anesthetist who would be giving the anesthesia care. This contrasts markedly with some hospital nurse anesthetists who usually introduce himself or herself as "a nurse from the anesthesia department" or "part of your anesthesia team." Pre-operative instruction sheets for patients, pamphlets describing the surgeon and his colleagues, and descriptions of care in general in all but the urologist office clearly delineated that it is a nurse anesthetist who is the anesthesia provider for the respective settings (artifacts A, D, N, O, R and U). Thus, nurse anesthetists in office-based surgery settings are clearly the anesthesia provider and bear the full weight of that responsibility.

Yet many patients simply failed to realize that nurse anesthetists, not anesthesiologists, are administering the anesthesia. The similarities in names appear to cause much of the confusion. However, those patients who do understand the difference between anesthesiologists and nurse anesthetists query their doctors about the issue. One plastic surgeon revealed that several patients asked why he chooses to work with nurse anesthetists instead of anesthesiologists. He explained to patients that since the nurse anesthetist is the one who is in constant attendance administering the anesthesia, they are the experts in the field as opposed to physician anesthetists who only oversee the work. He made an analogy to the patient saying, "Who do you trust to fly the plane, the pilot who does it day in and day out, or the pilot's boss who doesn't fly himself?" (field notes, 11-7-01, pp. 23-24).

These pro-CRNA feelings were not experienced in all settings. One surgeon used to work in his office with an anesthesiologist who retired. He knew the nurse anesthetist from working together in the hospital, and based on what he "eyeballed" during surgery in the hospital setting, he would trust the anesthetist to give care to his patients in the office setting (field notes, 1-24-02, pp. 74). Another surgeon used nurse anesthetist because their rates were cheaper than physician anesthetists.

The use of nurse anesthetists to administer office anesthesia was not nearly as new as the literature and current policy discussions claim it to be. What is new is the expansion of practices, the competition to provide anesthesia care, and actions of policy makers regulating care in some states. Though not widely known (even to someone practicing anesthesia for 12 years), several nurse anesthetists have worked in this environment for many years, albeit for much less complex procedures, and with different pharmaceuticals, technology, and duties. Of those studied, nurse anesthetists worked in office settings from 4 to 20 years. In fact, one dental CRNA kept all of her narcotic records from the time she started working with the particular dentists and it indeed dates back approximately 20 years. Another dental office anesthetist explained how she came to work in the office-based settings: "I am not hired, and have no contract. They call, I come. My practice expands currently by word of mouth. All the dentists I serve had a pre-set idea that I am just what they wanted for their patients. It's a self-selling product" (field notes, 1-23-02, pg. 75). Many of the office-based CRNAs supplement the work-week, and of course income, by contracting their services to various hospitals, or even other offices. One of the nurse anesthetists told me that doing such "keeps me exposed to a variety of techniques" (field notes, 9-18-01, pp. 42).

CRNAs in the office setting fell into four categories: autonomous providers, caring people, service providers (entrepreneurs), and quality/competent providers. CRNAs in the office setting described themselves as schmoozers, independent decision makers, the expert, practice builders, entrepreneurs, and collaborators. Additionally, they seemed to have a mutually respectful relationship with the surgeon versus a subordinate one.

In contrast, CRNAs in the hospital setting are often hospital employees, and once hired, don't have to sell themselves to anybody. They arrive to the hospital for their shift and accept an assignment. Decisions are made on a continuum of independence, and this is based on what type of contribution a physician anesthesiologist wants to make in terms of being involved in the situation, and giving directives. Often, in larger hospitals, the surgeons do not know the anesthesia provider, making their relationship somewhat distant. If a concern arises or circumstances change, they have an entire anesthesia department to work with to solve a situation. The surgeon in the hospital doesn't have to personally know the anesthetist in the same way as in the office setting. In the office setting, surgeons and nurse anesthetists have more of a partnership, a shared sense of responsibility, instead of demarcated responsibilities.

In office-based settings, nurse anesthetists had integral roles in moving the patients through the steps of the operative process. They were involved from the beginning to the end of surgical care, though intensity of involvement varied from office to office. It was discovered that a wide range of surgeries are performed in the office setting.

Surgeons and Dentists

Plastic surgeons perform surgery concerned with the restoration, reconstruction, correction, or improvement in the shape and appearance of body structures that are defective, damaged, or miss-happened by injury, disease, or anomalous growth and development. This kind of surgery has been practiced for thousands of years, dating to artificial noses and ears found on Egyptian mummies. Many surgical procedures are performed by these plastic surgeons in their offices: e.g. face-lift's, breast enhancements, brow lifts, abdominoplasties (tummy tucks), and liposuction. (See Table 1.)

The first plastic surgeon who participated in this research is board certified and has been so since 1989. He is a Fellow of the American College of Surgeons and a member of the American Board of Plastic Surgery, certified by the ASPRS, and a member of the American Medical Association. The second plastic surgeon in this research is a member of the American Academy of Aesthetic and Restorative Surgery, The American College of Osteopathic Surgeons, American Osteopathic Association, the American Society of Bariatric Surgeons and the Michigan Osteopathic Medical Association.

Urologists specialize in the urinary tract (kidneys, bladder and prostate) and male reproductive system (penis, testicles, and sperm ducts). In addition, many urologists treat disorders of the adrenal gland (hormone producing glands above the kidneys) and perform kidney transplants. The American Board of Urology certified the physicians in the urology office studied. This urologist performs three types of procedures in the office: diagnostic transurethral (endoscopic) procedures, otherwise

known as cystoscopies; dilations of the urethra; and biopsies of the lower urinary tract.

Dentists focus on the teeth and associated structures of the oral cavity, including prevention, diagnosis, and treatment of disease and restoration of defective or missing teeth. Operative dentistry is concerned with restoration of parts of the teeth that are defective as a result of disease, trauma, or abnormal development to a state of normal function, health, and aesthetics. The two dentists who participated in this research both performed surgical tooth extractions and removal of impacted teeth, in office-based surgery.

The five surgeons/specialists in this research worked collaboratively, with a nurse anesthetist in their office setting, and the anesthesia is considered part of the operative process. Three of the five surgeons were asked specifically, and dialogue ensued, "why" they utilized the services of the anesthetists. For example, it is known that dentists can perform tooth extractions using a local anesthetic administered themselves without an anesthetist in attendance and no sedation given. When asked why he used an anesthetist, instead of local anesthesia only, one dentist responded that it basically is much "easier" for him in terms of a cooperative patient (field notes, 12-10-01, pp. 20). This means that the patient is not tense, squirming, and literally fighting what the dentist needs to do. As one patient put it in the interview process (see Appendix E, Interview Index), "there is no way I could ever do this with just a local anesthetic" (interview, tab 6a, pp. 3-8). Additionally, the dentist responded that "most" patients fear the dentist, especially when the process involved is surgical extraction of teeth. If the patient is sedate, calm, still, and safe,

the surgeon believes this makes for a more satisfied patient (field notes, 12-10-01, pp. 20).

In terms of certain types of urology surgery, the same concept applies. A cystoscope can be inserted into the urethra with what is called local anesthesia gel coating the scope to numb the external tissues of the urethra. However, very few people prefer to have this done knowing exactly what is going on. The urologist said felt it would be better for the patients if they were obviously comfortable, and with enough amnesia, so that they may move a little bit, but they won't hurt and won't remember anything. Of the patients interviewed, they concurred that this was the preferred way they wanted to have a cystoscopy done (interviews, tabs 4a and 5a, pp. 7, pp. 1).

The plastic surgical procedures performed in the office settings included none that were invasive in terms of manipulation of major internal body organs. They were, however, extensive enough that either moderate to deep conscious sedation (explained later) or most often general anesthesia was the only method by which patients would be rendered free of pain and discomfort for the procedure.

Table 1

Types of Surgical Procedures performed on interviewees

Plastic Surgery
1) Abdominopolasty, mastopexy, arm lift
2) Breast augmentation
3) Face lift, brow lift, Upper and Lower Belpharoplasty
4) Breast Reduction, Male gynecomastia
5) Face lift, release of trigger finger
6) Abdominoplasty
7) Lip enlargment
8) Breast augmentation
9) Breast augmentation
10) Breast augmentation

Urology Surgery
1) Cystoscopy
2) Cystoscopy with stent removal
3) Cystosocpy
4) Cystoscopy
5) Cystoscopy with attempted ureteral stone extraction
6) Cystoscopy

Dental Surgery
1) Surgical extraction of impacted teeth
2) Surgical extraction of impacted teeth
3) Total odontectomy with bone resurfacing

Anesthesia Techniques Used in the Office-Based Setting

Anesthesia is the art and science of rendering a patient insensible to pain by the administration of anesthetic agents and related drugs, and therapeutic procedures. Three anesthesia methods predominated in the physician's offices studied: moderate sedation, deep sedation, and general anesthesia.

Moderate sedation is also called conscious sedation, or twilight sleep. Patients having moderate sedation respond purposefully to verbal commands, either alone or with light tactile stimulation. The protective reflexes of patients, such as swallowing and coughing, are intact, patients breathe spontaneously and cardiovascular function is maintained.

Deep sedation occurs when the patient is not easily aroused but responds purposefully after repeated or painful stimulation. Some intervention may be needed to maintain a patent airway, spontaneous ventilation is usually maintained, as is cardiovascular function.

General anesthesia is when the patient is not arousable, even upon painful stimulation. The airway needs to be intervened with in terms of keeping a normal exchange of oxygen and carbon dioxide. Spontaneous ventilation is possible, but often times positive pressure ventilation is required, meaning the anesthetist breathes using an anesthesia delivery system for the patient. Cardiovascular function may be impaired; for example, many of the general anesthetic drugs can decrease one's blood pressure and decrease or increase one's heart rate.

The nurse anesthetists that administered anesthesia in the urology and dental office settings included in this research administered both moderate sedation and deep sedation to their patients. In fact, the dental nurse anesthetists and those that worked in the urologist's office have a mutual agreement with the physicians and patients that they will only administer sedation in this particular setting. As one dental anesthetist told me "this minimizes risk to the patient as well as precludes much of the required equipment and drugs that must be available when general anesthesia is administered" (field notes, 12-12-01, pp. 70). For example, if a general anesthetic is going to be administered, there are specific but rare responses that may occur in the recipient, and these responses are triggered by certain anesthetic agents. In order to meet safety and quality standards of care, equipment, supplies, and pharmaceuticals must be on hand to treat this should it occur. However, they are not required if non-triggering agents are used.

General anesthesia as described above was administered only in the offices of the plastic surgeons. In each of the two plastic surgery settings, the AANA standards of care for office-based anesthesia were followed when patients received a general anesthetic. The AANA standards of care for office-based anesthesia were also met in the urology and dental offices (See Appendix F for the AANA Standards for Office-Based Anesthesia Practice).

Drugs Used in office setting anesthesia

Nurse anesthetists in all settings must know how to combine and titrate pharmacologic medications administered to the patient in order to achieve the desired state of sedation and/or general anesthesia. Clinicians engaged in the art and science of anesthesia must realize the fine line between a tranquil amnestic patient and the unresponsive and unconscious patient. According to Kost (1998), the ideal characteristics of injected pharmacologic agents to achieve the desired effects of conscious sedation include:

- Rapid onset of action
- Short duration of action
- Lack of cumulative effects
- Rapid recovery
- Minimal side effects
- Rapid metabolism
- Residual analgesia
- Increased patient satisfaction

The goal of conscious sedation is to allay patient fear and anxiety, while using the least amount of sedation to provide patient comfort. Brief periods of

amnesia are a result of several of the medications used, however, amnesia is not the sole intended effect, and sedation from all medications is on a continuum based on the patient's physiologic response to the medication.

Data was gathered from the medical/anesthesia records from each office. For patients who had an anesthetic and participated in the interview process, this data was subsequently transferred onto demographic sheets. Analysis of the drugs administered showed that most of the agents used for conscious sedation possessed the characteristics identified by Kost (1998). One exception is an anti-nausea medication used on one plastic surgery patient. Because it's long duration of action and rather long sedative effects, it isn't typically given to those who go home. It was, however, given in a small dose, which limits these effects. This individual's records showed no adverse effects from the administration of this drug i.e. prolonged time to wake up or prolonged recovery. Table 2 lists all of the pharmacologic agents used intravenously and via inhalation, in each of the office settings. It also lists the effect and purpose of each of the agents.

Drugs were administered both intravenously and via inhalation. Inhalation anesthetics were the primary anesthetic agents used for the patients who had general anesthesia. The two types used for all the general anesthetics were nitrous oxide and isoflurane. Both nitrous oxide and isoflurane are relatively inexpensive and accomplish the intended effects. There are however, even more rapid-acting inhalation anesthetics, which also offer an expedited wake up, or emergence, for patients. They are more expensive than those used. There are some disagreements in the literature that state for certain patients, the benefits of the drugs for some outweigh the cost of the drug. When asked why isoflurane was used, the

two plastic surgeon's offices, the answer was that they are pleased with the drug and it is indeed a cost issue.

Table 2

Pharmacologic Agents used in Office-Based Anesthesia

Drug	Intended effect
Intravenous	
Midazolam (versed)	amnesia, sedation
Sublimaze (fentanyl)	pain relief, sedation
Propofol (diprivan)	sedation, general anesthesia
Ketamine	sedation, hypnotic
Metaclopramide (reglan)	anti-nausea
Glycopyrolate (robinul)	minimize secretions
Decadron (injected into buccal mucosa)	reduce swelling, anti-nausea
Droperidol (inapsine)	anti nausea
Flumazenil (romazicon)	reversal of sedation from midazolam
Ephedrine	increases blood pressure
Zofran	anti-nausea
Ketoralac (toradol)	non-steroidal, anti-inflammatory, analgesic
Inhalational Anesthetics	
Isoforane	general anesthesia
Nitrous Oxide	adjunct to general anesthesia

Roles of the Nurse Anesthetist

Nurse anesthetists play many roles in the office-based setting. One of the nurse anesthetists responded to my query about their roles (field notes, 12-6-01, pp. 82):

> Ordering of all anesthesia supplies, ensuring equipment is maintained, ordering new equipment as necessary, anesthesia delivery, quality assurance reporting, patient scheduling, anesthesia billing, anesthesia fee collection, payroll (explained later), purchasing drugs, pre operative evaluations, recovery room management, and pretty much everything to make an anesthetic go.

One of the plastic surgeons responded to my query about the role of CRNAs (field notes, 12-05-01, pg 83) :

> The CRNA has the responsibility of giving the anesthesia, recovering the patient, making a list of needed materials (anesthetic drugs and equipment, fluids, supplies, etc), and tell us if there is a malfunction in the equipment. The office manager and/or surgical technician order the materials listed. We work with a biomedical maintenance company that services the machinery on a regular basis. Keeping up to date is done by what the nurse anesthetists and I find out and discuss. We talk about what we've heard or seen and reach a consensus. Safety is always the first issue, and secondly cost.

Additional roles surfaced during participation/observation (field notes, 12-12-01 and 12-10-01, pp. 65-70 and 17-22): For the remaining offices, the various roles of the CRNA was directly being the patient and surgeon educator, business manager, CRNA business owner, and traveling anesthetist, i.e. brings equipment and supplies with her. Two of the nurse anesthetists own their own private corporation. As part of their business of office-based anesthesia, they contract with other nurse anesthetists to work within specific surgeon's offices, as well as provide anesthesia care themselves. They write the contracts with the surgeons and agree to provide anesthesia services within the surgeon's office, and other duties as stated in their contract. Thus, they have payroll to do for certain anesthetists, but they are the business owner. Some call this entrepreneurial anesthesia care.

How does this all lead to greater patient satisfaction and/or quality care for the patient? Do these roles promote quality care? In the office setting, the varied CRNA roles are part of a product that the nurse anesthetist must sell to the surgeon and the patient. Maintaining a practice means being a successful provider. Not too surprisingly, satisfied patients recommend their doctor to others, and doctor's retain/employ CRNAs who have satisfied patients.

CRNAs must exercise skill in selecting suitable drugs. If the pharmaceutical agents are not suitable or adequate for safe anesthesia care delivery, or the equipment is not maintained and antiquated, this has potential for anesthesia mishaps and poor outcomes.

Assuming the duties of pre-operative educator, recovery room management, and recovery room nurse makes the CRNA the person/provider patients see the most. This is very different from hospital surgery. For example, in a typical Detroit hospital, a recovery room nurse phones a patient the night before they are supposed to come into the hospital for surgery. Another nurse is present in the pre-operative holding area to admit the patient to surgery. Actually, there may be as many as three nurses available to check a patient in, each with a specific duty. The anesthetist delivers the anesthesia, with an anesthesiologist supervising, adding two more people in the process. Anesthetists never leave a patient in an operating room unattended but are relieved by other anesthetists for meals and scheduled work breaks. Nurse anesthetists check the patient into the recovery room from surgery and turn the post-operative anesthesia care over to a recovery room nurse. She or he recovers the patient, and may be the one who escorts the patient to their car. This may actually be an additional nurse or transport person. The recovery room nurse or a discharge nurse often gives patients post-operative instructions. And the nurse who makes the follow-up call to the patient the next day to assess for anesthesia complications often is another person. The same tasks the nurse anesthetist does in terms of direct patient care in the office. While the hospital utilizes approximately 10 people, office-based surgery employs one. But, hospitals

do not require nurse anesthetists to order supplies, schedule equipment maintenance, and order pharmaceuticals, tasks done by others.

Relationships between nurse anesthetists and patients developed in the dental and one plastic surgery office sites, where procedures were of longer duration. Furthermore, these relationships contributed to positive outcomes. The patients in this plastic surgery office described the CRNA as thorough. One patient was quoted as saying, "Yes, I thought he was pretty thorough. I mean, he didn't miss anything that I could think of. I couldn't think of any questions afterwards that I had to ask him" (interview, tab 1, pp. 5). When asked if the patient felt safe regarding the anesthesia care in the office by the anesthetist, she stated, "Yes, I felt really safe. I really did. I was a little nervous about not going into the hospital, but it was cost prohibitive for me....but he reassured me, that anesthetist, that...he had answers for everything that I had a question for, as far as emergency, blood pressure, and stuff like that" (interview, tab 1, pp. 12). This related to the patient-educator role of the nurse anesthetist and led to the patient feeling safe. In this setting, the nurse anesthetist handled the recovery the patient.

In the offices where the procedures were quick and moving patients through the process is fast, this lack of time together impeded a relationship developing between anesthetist and patient. For example, in the second plastic surgeon's office, a typical morning may included six scheduled plastic surgical procedures one right after the other. The nurse anesthetist still carried out all her duties, but the patient had only minimal awareness of the nurse anesthetist's duties. Consider when a patient was asked how she felt regarding the manner in which the nurse anesthetist answered her questions (interview, tab 7, pp. 5):

> I just asked her how long it would take me to fall asleep, and she did explain that she would give me something in my IV to make me calm down, and that I would fall asleep almost immediately....She asked me if I had any allergies; I told her I had asthma and that it wasn't acute, and she asked if I had my inhaler and I said no I didn't have it here. And she was a little bit concerned about that...so she asked me when I had a last attack, she was going over, kind of being real thorough about that...how was I breathing that day, how I felt, she was more concerned about that than anything else...I think I would have asked her a few more things if I didn't feel that I had been at fault, you know we were 20 minutes late because...

In this situation, the anesthetist probably spent more time than usual, or than with a patient without asthma, eliciting pertinent information needed to provide quality care. As the anesthesia expert, if the nurse anesthetist overlooked anything related to the asthma of this individual, it could have contributed to a poor outcome. If she needed to treat this patient, her expanded role may have included tasks typical of a respiratory therapist, and she was equipped to give a treatment to facilitate breathing. However if the patient were having trouble breathing, it would have precluded surgery. It is a critical error to administer anesthesia to a patient who is having difficulties with asthma.

<u>These Were Not Surgical and Anesthetic Processes "Rife with Problems"</u>

These scenarios describe the steps of the anesthetic process and care delivered by the CRNA, from three separate office sites:

> A dental anesthetic
> (field notes, 12-10-01)
>
> A 62-year-old gentleman, not too tall and walking with a slight limp that was the result of major hip replacement surgery, enters the office of the dentist. Accompanying him is his wife who appears to be approximately the same age. They walk to the reception desk and inform the staff that they have arrived. When the man speaks, his teeth are evidently in very bad shape, discolored, stub like, spaces between some, and many appear missing. He has a charming mannerism, as evidenced by his smile when the dental office staff, as well as the nurse anesthetist, greet him. He sits down in the rather small waiting area; his wife sits right next to him.

He looks up when the nurse anesthetist comes out to greet him. She puts her hand out to shake his hand and he reciprocates immediately. "Mr. Smith, I am Sue, we spoke on the phone a couple of days ago. I am the nurse anesthetist who will give you your anesthesia for the dental procedure you are having today". There is also an introduction made between herself and the patient's wife. The nurse anesthetist pulls up a stool, sits down on it right in front of where the patient and his wife are sitting, gets rather close to the patient and begins by asking a couple of questions. They discuss when the patient has had anything last to eat or drink, did he stop taking his aspirin as advised, and did he have any questions still that were not answered when they last spoke on the phone.

The patient did indeed have questions. The "literature" of information sent out to the patient by the nurse anesthetist spoke specifically to the type of anesthesia that the patient would be getting. It is called conscious sedation in the pamphlet provided to the patient and the patient was very clear that he doesn't want to be conscious for this procedure, so he is confused. That is why the dentist recommended the nurse anesthetist to him because he had told the dentist he wanted to be "out" when all of his teeth were being taken out. They discuss that while this type of anesthesia is called conscious sedation, that she will make sure the patient is comfortable and has very little knowledge about what is going on. She also tells him that he will be breathing on his own though. The patient, the nurse anesthetist, and the patient's wife discuss this for a couple of moments and the patient states that he is fine with that explanation, as long as he does know or feel anything.

At this time, the nurse anesthetist asks the patient how would he like to pay for this procedure; check or cash, and she can even take a credit card. The patient asks if he can pay cash, does so, and she writes him out a receipt and hands it to his wife.

At this point the three of them walk into one of the several dental rooms in this specific dental office. The "room" for this patient is the room that this specific dentist uses for all his procedures in which this CRNA gives an anesthetic. It has specially built shelves, built by the dentist, for the anesthesia monitoring equipment and supplies used by the CRNA, to care for the patient. They guide the patient into the dental chair, and he and his wife exchange pleasantries, and she says she will wait in the waiting room. The first thing the CRNA does is put oxygen on for the patient through the use of what is called nasal cannula. Next, she expeditiously starts an intravenous in his hand. She gives him what she called a "test" dose of a medication similar to valium. She applies a heart monitor, a blood pressure cuff and a pulse oximeter. The later is used for determination of red blood cell oxygenation. The patient has these monitors on, fully clothed, and now enters the dentist. He is going to give an injection of local anesthetic; this will ensure even "less pain" during the procedure and is often done in conjunction with the sedation. Just prior to giving many injections in the mouth of the patient, at least four, the nurse anesthetist administers enough narcotic, sedation, and a small dose of what is called a dissociative anesthetic into the IV of the patient and he drifts off to sleep peacefully, breathing on his own, vital signs stable. She tells the dentist it is OK to inject the many ampules of local anesthesia, the

patient squirms a little but does not fight and does not stop breathing on his own.
The procedure is carried out; total teeth extraction. Intermittent doses of sedation and pain killers are administered through the intravenous, depending on the needed "depth" of anesthesia to keep the patient still, some teeth are impacted and the dentist surgically extracted them with what appears to be pliers. The procedure progresses; the patient is monitored by the nurse anesthetist, and in a couple of hours the teeth are all out, the gums are sutured, the bones of the upper palate are sanded. The dentures are fitted. Blood has been suctioned from the mouth through out the procedure. The patient's vital signs have been stable. The nurse anesthetist administers a dose of reversal agent for the sedation, and the patient, in a couple of minutes, says; "is it all over" and "I'm done?" as if he can't believe it. There is a period of time that superficial work is being done by the dentist, no further sedation has been given, and the patient is in the defined period of recovery. He states, "I can't believe how nervous I was, and that was nothing." He is asked what he remembers and he says "nothing." He is asked if he is in pain and he states "no."

A urology anesthetic
(field notes, 11-2-01 and 11-06-01, pp. 50-53, 57):

A 29-year -old woman checks into the urologist's office reception area, a very large office situated amidst the first floor of a very large multi story health care office complex. After she checks in she is told to have a seat.
Within ten minutes, a registered nurse comes out to get the young lady. She appears healthy, in no obvious pain, and is escorted into a very small, closet-like changing room. She is instructed to put on the provided paper-type patient gown. She sits on a tiny bench in this very small changing room, no bigger than four feet by four feet.
The nurse comes to get her out of this room, and they walk a couple of steps, into an office room across the hall. In this room is a typical urology table, similar to a gynecologist table, complete with stirrups to lift the legs. She is guided to sit onto the table and then lies down.
The nurse anesthetist, a gentleman, has been waiting for her in this room. He is situated at the head of this table, with monitoring modalities such as an automatic blood pressure cuff with digital display, an ekg machine, and a portable pulse oximeter.
He introduces himself, and tells the patient he is going to start what is called a heparin lock. This is similar to an IV, but without a bottle of fluid handing. Medications are administered through this, and then flushed into the circulation by a syringe of normal saline. There is no dripping of fluid. After this is inserted expeditiously in a matter of a few moments, the rest of the monitors are placed, and the surgeon is called from his own office via intercom, "Dr. M, we are ready for you in the cysto room."
The surgeon enters, the patient's legs are placed in stirrups simultaneously while the anesthetist begins to administer a very small amount of sedation and as soon as the patient is sedate, the surgeon proceeds. The actual

procedure takes less than 10 minutes, the patient's legs are brought down from the stirrups, and heparin lock is removed. The only medication given was the initial medication, which provides amnesia and quick intense sedation for a matter of moments, and the patient stands up. The nurse anesthetist does monitoring during the procedure that lasts just a few moments.
When the patient comes to she is asked if she is okay, does she remember anything, or is she in any pain? She states she is okay, does not remember anything, and has a little burning sensation. She sits on the side of the surgical table for a moment or two and is escorted by the nurse back into the closet of a changing room.

A plastic surgical anesthetic
(field notes, October 16, 2001)

A 30- year old female enters the plastic surgeons office; the planned surgical procedure is breast enhancement via breast implants. She has a pleasant look to her face, smiles a lot, is seated in the lounge-like leather chair in a consult room of the physician's office.
Her husband is with her, although her chair is in the center of the room, and her husband is sitting on a stool in the corner. The surgeon has already been in to complete his assessment of her, marking literally on her chest that serve as guidelines for the planned surgical procedure. The male middle-aged CRNA enters the room after knocking gently on the door. He extends his hand, shakes her hand, and makes his introduction. He asks her the important and routine questions, "nothing to eat or drink after midnight?" "No removable dental work?" "No contact lenses in?" all the required questions. He has reviewed her chart in another area of the office prior to this assessment and has completed much of the paperwork. The pre-interview review allows him to have knowledge of her health status before he even meets her. He discusses with her the findings he gleaned from the chart and makes sure she confirms what the chart has documented about her health history. They discuss pain management post operatives, basic do's and don'ts, and he also explains in moderate detail why she should take it easy on the food consumption the evening of surgery explaining in some detail the effect that general anesthesia has on the digestive tract.
She watches the CRNA intently, not taking her eyes away from him and she nods frequently giving evidence that she understands what he is saying. She asks a specific question related to the fact that she only has one kidney and wants to know if this poses a concern? He assures her that it does not and they discuss why. Her face appears pale as do her lips; it is unclear if this is due to anxiety. When their interaction is complete, the CRNA leaves the room; she is left in private, in a white terry cloth robe provided with her husband.
There is a minor problem in the process today, and the breast implants have not yet arrived. The office manager lets the patient know what is going on and

why it is taking so long to get her into surgery. After over an hour wait, they finally have the implants and are ready for her procedure.
The CRNA escorts her into a back room of this very large office setting, down a carpeted hallway, and into the room where the surgery will be performed. It is small, clean, organized, and equipped an operating room table that more or less resembles a Barca lounger. During this period, the patient is having social dialogue with the CRNA, "I'm ready, I feel okay." Her speech is clear. She is assisted up onto the operating table and is told to lie back. She does so. The CRNA first places the blood pressure cuff on her, and takes her blood pressure with the automatic device. On her right arm, in her hand, he places her intravenous, quickly and without any difficulty. She states "Boy that was good, I didn't hardly feel anything." He begins her anesthetic sedation first, and then applies the rest of his monitoring devices. Once they are on, and she looks sedated, he warmly and calmly tells her she is going to sleep now. He gives her the dose of IV medication-called the induction dose-and she is asleep. This is a full general anesthetic, so he places the mask over her nose and mouth, and breaths for the patient. He performs the general anesthetic, monitors the patient, and when the case is done, he wakes her up.
She is assisted to move over to a stretcher where they wheel her next door into a recovery room. The CRNA is also her recovery room nurse today. He performs all the duties of a recovery room nurse, which includes monitoring and determining when the patient is awake and stable enough to be discharged. This takes about 30 minutes or so for this patient.
She was present in the office for approximately 90 minutes (not including the wait time for the implants)

All of the standards of care were met in these situations, yet they did not appear to be the only contributing factors to patient satisfaction outcomes. Patient selection criteria, anesthesia techniques and medications used for the anesthetics, the communication patterns of the providers in each of the office settings, and the varied roles of the nurse anesthetist in each of the office settings all contributed to patient satisfaction as well as quality clinical outcomes.

Screening Candidates for Office-based Surgery and Anesthesia

The American Society of Anesthesiologists' Physical Status Classification is used by anesthesia providers to standardize the physical status categories of patients that allow comparisons of outcomes based on physical status. Following the preoperative evaluation, the provider assigns each patient to one of the categories.

For example, an ASA 1 patient is considered a normal healthy patient; an ASA 2 patient is a patient with a mild systemic disease, such as controlled hypertension. This system provides a way to screen patients for office-based surgery and thus a way to improve clinical outcomes. See Table 3 for ASA Physical Status Classification System.

Table 3

American Society of Anesthesiologists' Physical Status Classification

ASA 1	A normal healthy patient
ASA 2	A patient with mild systemic disease
ASA 3	A patient with severe systemic disease that limits activity
ASA 4	A patient with an incapacitating disease that is a constant threat to life
ASA 5	A moribund patient not expected to survive >24 hours.

All of the physicians and nurse anesthetists studied made distinct provisions related to those they operate on in their offices, but these vary across settings. Oftentimes the criteria was simply stated, such as the CRNA and the dentist verbally agreeing that "only ASA 1 and 2 patients," (field notes, 12-10-01, pp. 22) as they are frequently referred to, will be operated on, or treated by the dentist, in the office. One of the dental nurse anesthetists actually has a policy, titled "Policy #3" in her own self-developed policy manual that clearly delineates patients who will be considered for anesthesia care in the office setting (artifact S). While her criteria are

not spelled out using the ASA classification system, it does state that patients must be in good general health. It also states the patients "with mild to moderate medical problems will be considered on an individual basis if the condition is stable or the patient has received pre-operative clearance by their regular physician, an internist, or other appropriate physician." Additionally, it states "patients will not be considered for anesthesia services in the office setting if they have...." and she clearly spells out a list of nine conditions that preclude a patient from being a surgical or dental candidate with anesthesia delivery in the office:

1.) Have uncontrolled hypertension, unstable diabetes, or angina
2.) Have a history of an unstable psychiatric disorder. Note: patients who are taking MAO inhibitor drugs must discontinue these drugs at least two weeks prior to surgery. This must be cleared in writing by the patient's psychiatrist. If discontinuance of MAO inhibitor is prohibited by the psychiatrists in the best interest of the patient, then this patient will not be considered under any circumstances
3.) Are less than six months post cardiac surgery or continue to have unstable hypertension, angina, or dysrhythmia.
4.) Have significantly abnormal liver function studies with diagnosed liver disease.
5.) Have a known coagulopathy that is unstable or uncontrollable by medication
6.) Have a moderately to severely compromised pulmonary status.
7.) Have an unstable or moderate to severe neuromuscular disorder (MS patients in remission will be considered on an individual basis).

8.) Have a significant airway anatomic abnormality or a known history of difficult airway control or ventilation.

9.) Are morbidly obese.

One of the two plastic surgeons and the nurse anesthetist working with him, explained how they think about promoting positive and preventing negative outcomes: "we are extremely selective in whom we choose to operate on in this setting" (field notes, 6-29-01, pp. 4). Additionally the plastic surgeon mentioned several times that "common sense prevails over all," and "I am always in control of the situation so that if we need to stop surgery immediately because of a problem related to the anesthetic, I will stop and close the patient" (field notes, 12-11-01, pg. 62). They control patient care to guarantee a good clinical outcome, and hopefully patient satisfaction. And surgeons follow their policies, as this event from my field notes attests (11/25/01, page 60):

> The nurse anesthetist, in the plastic surgeon's office, brings a middle-aged female into the operating room. She has a history of hypertension and supposedly had a medical clearance by her internist; she brought in a piece of paper with the clearance written on it and signed by the internist. The patient had been cancelled once before due to her high blood pressure and she was recommended back to her internist for follow up and further modification of medications. Upon arrival to the operating room this visit, her blood pressure is taken first, before any other monitors are placed by the CRNA. It is high. The CRNA feels this may be in part due to nervousness so he proceeds to administer a small but "standard" dose of an anti-anxiety medication through the patients intravenous that had just been placed. The blood pressure remains high even though the patient appears to be calming. The planned procedure was one that would cause some blood loss, and if the blood pressure was high, this could create further bleeding which can lead to a myriad of complications. The CRNA communicates with the surgeon and they together address the patient to confirm that this clearance was by her internist and that she indeed took her high blood pressure medications as instructed, prior to surgery. She confirms. The nurse anesthetist and the surgeon agree on an additional medication through the intravenous in a

> moderate dose to see if this lowers the blood pressure to what they mutually agree upon as an acceptable range. The blood pressure remains high. With the patient still on the operating room table, and in the attendance of the CRNA, the surgeon leaves the room and literally phones the patient's internist, who interestingly enough denies the medical clearance and states that the patient must have signed his name. She is not a candidate for the procedure; the internist knows her well and communicates to the surgeon that she is not controlled in terms of her high blood pressure. He does not believe she should be operated on. The patient is approached with the facts, admits to having lied, and the case is cancelled. Her intravenous is removed and she is sent home with clear instructions that if she wants this elective procedure under anesthesia in this setting, that her blood pressure will have to be normalized and the medical clearance obtained by the internist must be legitimate.

When the urologist and CRNA who work together were asked about patient selection criteria, they admitted to having nothing in writing, but more of a verbal agreement on what types of patients would have urology procedures done in the office with anesthesia delivery. They both stated, when asked individually, that they have never disagreed on the patient selection criteria, and don't plan to in the future (field notes, 1-24-02, pp. 74). They based their criteria on what they knew to be acceptable standards according to their respective practices.

Communication Between Surgeons and Nurse Anesthetists

A large part of surgeon-nurse anesthetist collaboration encompasses effective communication. In fact, communication was the primary aspect of office-based surgery that promoted, and linked together, positive clinical outcomes, quality of care outcomes, and patient satisfaction outcomes.

Based on participation observations, dialogue with the providers and patients, analysis of artifacts, and other data (i.e. journal), a figure depicting how effective communication was demonstrated was developed (see figure 1). It shows the links between patient satisfaction, safety, and quality anesthesia outcomes in the office-based surgical setting. When patients experienced less than optimal feelings of

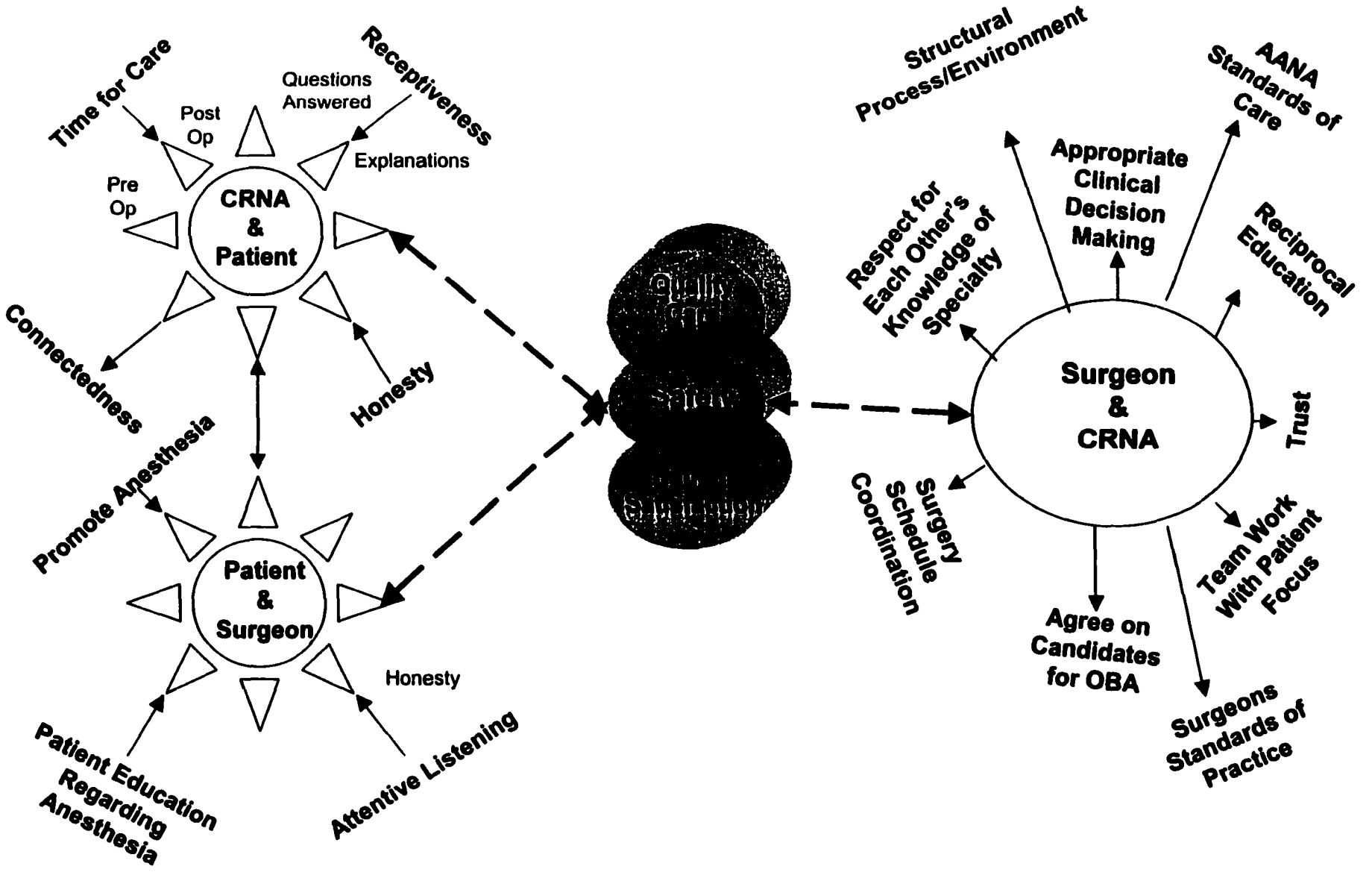

Figure 1

Demonstration of Effective Communication

satisfaction and/or perceived quality care, it was easy to find where in the figure of effective communication the breakdown occurred.

Effective communication had several facets by care providers in the office-based surgical environment. It was evident in the dialogue amongst providers, and between providers and patients. It was evident in the handouts and patient-information pamphlets and booklets present in each office setting and distributed to enhance patient understanding of care. Also, surgeon-nurse anesthetist communication became evident in the office-based environment during surgery in each of the settings. It appeared to be the key, driving force, the must-have component to make the health care delivered considered high quality, and safe.

Discussions between surgeons in the office-based settings, and the nurse anesthetists in these settings, clearly were effective in promoting quality of care. There were no territorial boundaries or attitudinal professional barriers that existed. The surgeon was the medical doctor or the dentist and the anesthesia provider was a nurse, each valued and respected the knowledge and the skills of the other as the expert in each respective field, yet made efforts to work in a team to promote quality of care. For example, in the first plastic surgeon's office, the surgeon viewed the nurse anesthetist (with whom he has worked for 12 years) as the expert, the one who has been "doing this for years, the one who was trained to give anesthesia." The surgeon stated, "I need to let the CRNA use his knowledge and make his own decisions. He needs to use his skills, and I need to promote that level of compassion that is between the nurse anesthetist and the patient. If I interfere with that compassion, that is not good" (field notes, 12-11-01, pp. 62).

In this setting it was evident that professional status barriers simply do not exist, and this does promote patient satisfaction and positive outcomes. In observing the surgical process, after the patient is brought to the pre-operative consult room and after the surgeon greets the patient, the nurse anesthetist interacts with the patient to obtain a health history, assign an ASA number, and develop an anesthesia plan. According to the AANA Standards of Care for office-based anesthesia (Appendix F), Section 1 Standard 1, the nurse anesthetist will perform a thorough and complete pre-anesthesia assessment. It further states that the responsibility for the care of the patient begins with the pre-anesthetic assessment, and except in emergency situations, the CRNA has an obligation to complete a thorough evaluation and determination that relevant tests have been obtained and reviewed. The pre-anesthesia assessment of the patient undergoing office-based surgery must include an assigned physical (ASA) status, an airway assessment, knowledge of previous anesthetic history, allergies, fasting status, and a complete history and physical.

It is a given that each patient receiving anesthesia by the nurse anesthetist in this setting will be assessed by the CRNA pre-operatively, and that it takes time to complete such an assessment. There was no rushing of the nurse anesthetist on behalf of the surgeon, an act not uncommon in the world of surgery. The CRNA took time to perform his interactions pre-operatively with patients. The surgeon, when asked what is going on now said, "CRNA (gave name) needs to take time to get to know his patients" (field notes, 12-11-01, pp. 62). Ample time is given for each to perform their duties, and upon completion of such duties, corroboration occurs between doctor and nurse to discuss findings. The surgeon accepts the tasks of the

CRNA as those that follow standards of care, and accepts the standards of care of that which is vital and needed to prevent crises. Additionally, when the CRNA in this particular office did this assessment, his mannerisms demonstrated compassion towards the patient. There was strong eye contact, clarification of answers (which demonstrated listening), and understanding. As one of the patients commented when asked about the interaction between the nurse anesthetist and herself (interview, tab 3, pp. 6):

> Excellent. Actually he told me things I never heard before. And I told him that. I said, you know, I had never known that. And thank you for sharing that. And that is the connection that many of use are looking for that you don't know is available that people are willing to share with you because typically they don't.

This particular patient had a moderate-to-deep sedation anesthetic, and this discussion pertained to what the patient should do to prevent post-operative nausea and vomiting, while meeting fluid requirements. During the history taking by the CRNA, he found out that she had a previous history of post-operative vomiting. They talked about ways to prevent this from occurring that would be somewhat within her control, as well as the CRNA modifying his anesthetic regime accordingly. He added a potent anti-nausea medication to her anesthetic, one was selected that does not cause a delay in wake-up from the anesthesia. The communication between the patient and the CRNA, as well as the communication of findings to the surgeon, proved effective. The decision was made as to which anti-nausea medication would be used. During the interview with this patient, she stated she had not gotten ill, and she said, "it worked for me!" (interview, tab 3, pp. 6). She experienced a positive clinical outcome, expressed satisfaction with care, and perceived that she received quality care.

Further evidence that professional territorial boundaries did not exist came from other offices. For example, in the urology office, the surgeon explained what he wanted for his patients as a result of the anesthesia care. He described wanting an anesthetic, which would "make the patient comfortable and not remember anything" (field notes, 1-24-02, pp. 74). He deferred though to the nurse anesthetist, the expert, in deciding which regime of medications would be used to do this. The interviews with many of the patients who underwent urology procedures verified that they wanted the same thing that the surgeon said they did, "to be "out" for the procedure, not to get sick, and when I wake up, I'm okay, you know I am not wobbling around and mumbling and stuff" (interviews, tab 2a, pp. 7, tab, 3a, pp. 4, & tab 4a, pp. 6).

For the dental offices, the option to have an anesthetic intravenously is up to the patient. It is the surgeon though that actually refers the patients, those who express concern or fear of not having an anesthetic, to the nurse anesthetist. The dental anesthetists make themselves available as the anesthesia provider, for the patient who requests an anesthetic. As both dentists in this study reported, they feel the patients are more comfortable and it is easier for them to technically do what they need to do with a calm and sedate patient. If their patients do not want to be aware, and upon conclusion of the procedure are not, this was identified by those patients interviewed as "everything was great. They told me what was going to happen, so everything was fine!" (interview, tab 6a, pp. 3).

More evidence of collaboration between nurse and doctor, and not placing one's status over the other as the more important care provider, was evident in the second dental office setting. This collaboration truly benefited patient care. It was in

this office that the CRNA was the "teacher" for the dentist in emergency and resuscitative care. In the state of Michigan, the Michigan Dental Regulations state that the dentist can oversee the care of the nurse anesthetist in the office setting, as long as the dentist remains up to date on anesthesia technique, which includes resuscitative care. The nurse anesthetist in this office is trained as an advanced cardiac life support educator, and permitted by certification to train others in advanced life support. The dentist maintains his mandatory requirements by learning from the nurse anesthetist. She certifies the dentist in advanced life support. It seems to make sense that if all providers were educated in life support and knew how to respond if medical crises should occur, this would promote quality patient care outcomes.

Effective communication between anesthetist and surgeon also was established in promoting positive clinical outcomes, those outcomes not leading to morbidities, or mortalities. Oftentimes there was dialogue that transpired during the actual operative procedure, prior to an operative procedure, and even non-verbal ways of communicating what was needed from each other in terms of preventing bad outcomes. Examples of this include the previous clinical care discussed regarding the cancellation of surgery due to high blood pressure.

This may seem commonsensical, but in another line of research (unpublished) drawn from closed malpractice claims, poor communication led to grave clinical outcomes. Surgeons and anesthetists, if not in total agreement and understanding and communicating with each other, failed to provide quality care which led to the demise of the patient.

In the office-based surgery research, communication transpired intra operatively between nurse and doctor that led to positive quality outcomes. For example, during a dental procedure, the surgeon constantly informed the nurse anesthetist as to the status of the patients' bleeding gums, and if it was under control. He literally said, "The bleeding isn't bad; we have it under control; how is the patient breathing?" (field notes, 12-10-01, pp. 19). This is important because blood, if not suctioned at appropriate times and allowed to trickle down the throat of a patient can lead to serious consequences for the patient. If the incision into the gums of a patient is not done carefully, if the patient is over-sedated and not in control of coughing or swallowing, this blood in the back of the throat can cause a laryngospasm, or in layman's terms, a closing of the vocal cords, and subsequent severe crisis situation. Though it may sound dramatic to the lay-person, it is a serious consequence that doctors and nurse anesthetists talk about to prevent its occurrence.

In the urology office, something as simple as the surgeon acknowledging when the anesthetist tells the surgeon that the patient is sedate enough to insert the endoscope (cystoscope), can prevent a wide range of negative outcomes, including patient pain, unexpected movement, and rupture of the bladder. It is through effective communication between the providers that poor outcomes can be prevented. The urologist studied was called into the operating room when the nurse anesthetist was ready to have him start the procedure. The sedation was given and a verbal "go ahead" as well as a nod at times, let the surgeon know when to proceed. None of the patients in this study reported untoward clinical outcomes reflecting of a lack of communication between providers (field notes, 11-6-01, pp. 53).

Imparting information to the patient ahead of time, by both the surgeon and the nurse anesthetist, as to details of their anesthesia care, also demonstrated effective communication that led to quality care and positive outcomes. Pamphlets, handouts, and consent forms obtained from the office of one of the plastic surgeons, and both of the dentists (Appendix A), clearly delineated either who their anesthesia provider would be, and/or instructions of what to do in preparation for surgery, and what to expect from the anesthetic (artifacts A, D, N, O, R, U). An anesthesia care-plan written as patient instructions by the nurse anesthetist from one of the dental offices is mailed to the patients ahead of time; those who have opted to have (conscious) moderate sedation. In the care plan it states such things as (artifact O):

> You and your doctor have chosen to perform a procedure in the office, under intravenous sedation. Your anesthesia will be tailored to your individual needs, taking into consideration the proposed procedure and your physical condition. An experienced, Masters prepared, Licensed and Certified, Registered Nurse Anesthetist will administer the medications as necessary for your comfort and relaxation....you can expect a pre and post surgery phone interview from your nurse anesthetist. Please call the nurse anesthetist at your earliest convenience to discuss your health status and the anesthetic, prior to your procedure.

This information continues in writing, as how to contact the nurse anesthetist, and also discusses guidelines for pre-operative care and post-operative care. A patient interviewed from this office who did contact the nurse anesthetist and subsequently met the CRNA in person just prior to his procedure stated,"...when I went to Dr. X's office and met her, she made me feel very, very at ease...made me relax...she was very pleasant, didn't make me feel nervous, she didn't seem nervous. And I was nervous and that really helped lessen my anxiety" (interview, tab 11, pp. 4).

This same patient had questions about the term "conscious sedation." He expressed confusion regarding having an anesthetist give him drugs that would not

allow him to be aware; and to him conscious sedation meant being aware. When they met in person, he asked the CRNA the question for clarity as to exactly what this meant. In the interview he stated "I asked questions, and then I found out I would not remember anything....then I was reassured by the CRNA to not worry...to relax, and I would not be aware of everything that is going on" (interview, tab 11, pp. 6).

Indeed, in the interview he expressed:

> If I had to do it tonight, I would not change a thing about it....If I had to go right now, I would do it again, in a heart beat. When I woke up the next morning, I had no pain, nothing hurt. I wasn't nauseated, I just thought wow...I went through all that and don't remember anything. And I didn't have any pain!

Handout pamphlets from the office of the first plastic surgeon are given to the patient and state the following: "Our Operating Room is staffed by registered nurses certified in Advanced Cardiac Life Support, certified registered nurse anesthetists, and certified surgical assistant. These staff members have worked closely with Dr. X for many years" (artifact D).

Many of the patients interviewed from this office, as well as most from the other offices, stated that they trust the surgeon or they would not be there. If the surgeon trusts the nurse anesthetist and believes they are competent, then the patients stated they do also. One patient in particular told me, " An acknowledgment that he had been with him a long time and he was very good and he was very comfortable with him. I mean, the words were a reassurance that you could trust this guy" (interview, tab 6, pp. 4). When asked if she was satisfied with the anesthesia care and would recommend it to others, she responded "...in terms of the comfort of it in terms of what it did to make it a non-traumatic experience, it was wonderful. I

would do similar type anesthetics, procedures, with similar types of providers in the office" (interview, tab 6, pp. 22-23).

A Break in Communication: Now What?

Several things happen when there appears to be a breakdown in communication: patients feel they lack an understanding of the anesthetic process in the office, they need more explanation, or they are simply feeling uninformed or ill-prepared for an anesthetic. Dissatisfaction became evident in terms of how patients perceived quality of care in one situation. In a second situation, when additional communication occurred after the fact, satisfaction became evident (explained later) but indeed was after the fact. The initial response of the patient was less than optimal.

During an interview with a dissatisfied urology patient, the lack of effective communication became evident (interview, tab 1a, pp. 2):

> I didn't know that it...was a nurse. I didn't know what to expect because, and I am angry about going to the office, and I am thinking about writing a letter. No one explained to me what was going to happen to me, and I know it is probably my fault that I didn't ask, but when the nurse came to get me and take me into the room, there were no, it was...just automatic, like I said, the nurse...I don't know how you say it...put the IV in my arm and I am out right then. I had no time to ask questions...I wanted to know what I was going to look like, what exactly they were going to do, but I knew a lot from reading the books and they tell you exactly what is going to happen and all that stuff. I still wanted to see...and then when I came out of it, I was so loopy that I didn't think to ask anything of it. So I can't even really recall a lot that I talked to the doctor about.

This patient clearly experienced a breakdown in the communication pathway and did not feel comfortable or willing to stop what was going on and demand an answer to her questions and concerns. Nor did the providers meet her expectations or needs in terms of being informed. Needless to say, she perceived her care as safe, yet with minimal satisfaction felt, and even poor quality. Her needs were not

communicated nor met, and the provider did not inquire as to what she expected or wanted to know. She also thought the nurse (not CRNA) who escorted her into the pre-operative changing room was rude and said (interview, tab 1a, pp. 3):

> She was very rude, right from the get go, right when she called my name from the office. I knew she, she held the clipboard up to me and she said, okay you have a few questions here you haven't answered, if I ever had any heart problems or things like that. And I said I don't know why I didn't answer that one, and she said [sarcastically imitating the nurse] well, I don't know either. And I am like, okay, this is great. So then she sent me to that little room, which I think was a horrible place to have to sit before you are having something done that you know nothing about...

There is evidence in a few of the situations when patients simply did not speak up and ask or inquire on their own behalf. It could have been related to anxiety, or simply not knowing what to ask. Or they may have been told about their care, but simply did not process the information to a level that they inherently needed. It did happen more than once that communication was not initiated from the patient even when they needed it, and they often made reference to not really knowing why they didn't speak up (interview, tab 7, pp. 1).

In the second dental office visited, another situation occurred when a tooth-extraction patient did not understand what conscious sedation, or moderate sedation, means even after having it explained. The nurse anesthetist in this setting explained the anesthesia care in great detail in the pre-operative holding/consult room. The patient was witnessed nodding her head in agreement. She also informed me during the interview that they had discussed some of it on the phone the night before her dental surgery. She however said (interview, tab 6a, pp. 2-5):

> I knew I had to have the sedation...and I asked the dentist, can I have the IV and get sedation so I won't hear, be awake, look, know, be aware of anything that he is doing? And when they spoke to me the morning of, and then we did that piece of that thing I filled out, she being aware of everything and what

> the whole procedure was going to be and stuff like that. [the nurse anesthetist had her sign a consent and explained what conscious sedation would be for her] ...Um, I signed the consent and I went into the room...she did my IV and I was really starting to relax. I was laying there listening to everything and then I remember the dentist coming in and the people were talking and...then I remember waking up in the middle of it....I was terrified, I was freaked out...it made me mad at first but I talked to her to understand why [after surgery], and I wasn't under a heavy sedation, I was just asleep enough to not be aware, but I...she didn't really explain why.I woke up, but she apologized to me. But no, it wasn't that bad, because then I fell right back to sleep.

This patient still did not understand conscious or moderate sedation, as evidenced by the fact that she still said that she woke up. Experienced anesthesia providers know this statement is confusing in regards to sedation, as one is not totally under or out, to say they "woke up." One can be sedate, calm, relaxed, intermittently appear awake, yet not remember anything at all because of the amount of amnestic medication given as part of the anesthetic; as part of the sedation. Patients seem to confuse sedation and periods of wakefulness as 'recall' under general anesthesia. The difference is that 'recall' under general anesthesia means that the patient is supposed to be unconscious and not know anything that is occurring, but after they emerged from the anesthetic, they can recall what happened because they heard and gave a step-by-step account of what people said. They feel they woke up under anesthesia. Rarely, and due to a variety of causes, patients experience recall under general anesthesia. Being intermittently awake during sedation is what is expected; the amount of remembering is directly proportionally to the amount of amnestic medication. And the amount of amnesia is directly related to the amount of sedation one feels from the amnestic medication. This confusion turns out to be a significant piece that could be alleviated with better communication.

After talking with the anesthetist post-operatively, this patient said that if she had to do this again (which seems likely), that she was so satisfied with the explanation by the CRNA about waking up that she would definitely have the same anesthetist. Her exact words were: "Her calming attitude was great. When I said I didn't understand why I woke up, and she just called to see how I was doing. Her explanation was adequate...and I would have her again, oh yeah, she's good" (interview, tab 6a, pp. 9). Effective communication after the fact warded off a completely dissatisfied and angry patient, and turned everything into a productive scenario.

What the Patients Say

The final section of this chapter focuses on understanding what sense the patients make of having surgery with anesthesia delivery in the office setting. Table 4 gives the demographic data for the interviewees.

The focus of the interviews was to have patients describe the experience from beginning to end, of having surgery in the office setting. Prompts were used to draw rich information from the interviewees on how they perceived the wide range of care, such as being informed, what was good about their anesthesia care and what was not so good, what their clinical symptoms were before and after, and what aspects of care they felt contributed to positive or negative outcomes.

Domain analyses were done by first separating all the transcribed interviews into sections according to surgical service: dentistry, urology, and plastic surgery. Two semantic domains were chosen for each set of interviews under one surgical service: 1) x is a way patient's described satisfaction with anesthesia care, and 2) x is a way patient's described dissatisfaction with care.

Table 4

Demographic Data

Patients Interviewed

	N	Plastic	Dental	Urology
Mean age-yrs.		43	37	52
Males	7	1	2	4
Females	12	9	1	2
General Anesthesia.	9	9	0	0
Sedation	10	1	3	6
ASA I	10	7	2	1
ASA II	9	3	1	5

Care in the Urologists' Office

Patients in the urology offices who received anesthesia care by the nurse anesthetist were generally satisfied. Patient satisfaction was really the larger more inclusive domain, and had as included terms many aspects of care that were very similar. For example, the cover term for the taxonomy is either Patient Satisfaction or Patient Dissatisfaction. Under this heading, similarities were identified that allowed for groupings of items, such as the nurse-patient interaction, the process of anesthesia delivery, meeting patient needs, and personal qualities of providers.

They did intertwine with each other but for clarity sake will be described in the order they are listed.

Nurse-patient interaction had many components that patients directly linked to satisfaction of care. Such interactions included 1) preoperative preparation of the patient, 2) attention given to the patient, 3) feelings that the patients had on being taken care by someone they view as competent, and 4) personalized care the patients felt they received by the providers in this environment.

For the most part, patients want to be informed. They want to know what is going on and how they are going to be treated. They want to know what the anesthetist is doing, when they are going to sleep, and they want to know that they are being heard. When the patients were asked about their preoperative preparation in terms of their anesthesia care, the patients who were experienced and had the procedure multiple times responded favorably. Those who were new to this environment had some concerns.

Those new to office-based surgery commented on pre-operative care and their comfort, saying (interview, tab 1a, pp.3):

> Just the quietness. Not people rushing around in hospitals gown, not seeing everybody get an IV started. Privacy. I was the only one there and I was the only one getting an IV...I felt safe. There was an anesthetist there and there was a doctor there. And I felt they could hand it, wherever they are. Wherever they are on the street, in a subway, wherever.

Many of the patients with experience in office-based surgery felt the procedure was "old hat;" they felt more than adequately prepared for the surgery and said the nurse interactions with them "were just fine" (interview, tab 1, pp. 7). When asked, though, if they would like more information, a few of the experienced people commented that they would have when this was all new to them. They also believed

that it would help others to lessen their anxiety, those who are not regulars (interview, tab 3a, pp. 10).

Those who were less experienced, wanted to know more. When asked about their preparation for anesthesia, one patient responded, " Actually they didn't tell me anything. I don't even know what I got. I just assumed I was getting Versed. That was the one thing that did bother me. I wasn't told what I was getting" (interview, tab 1b, pp. 3).

The amount of attention that the patient felt he/she was receiving by the anesthetist also impacted feelings of satisfaction with care. "One-on-one care" was a term used often by the interviewees. Additionally, consider the following statement made by a patient in the urology office, "I feel safer in the office because I feel as though there is a closer relationship between my doctor, his nurse, and the anesthetist, and myself, than in the hospital, where I am at the mercy of *everybody* there" (interview, tab 3a, pp. 8).

Feelings that the anesthesia provider was competent also impacted feelings of satisfaction. It was common for these patients to trust their surgeon. They almost all commented that if the surgeon trusts the provider, then they certainly do. One patient said, " ...I think what it boils down to is I trust him [surgeon] 100% when it comes to this treatment. I never second guess him, or question him on something" (interview, tab 3a, pp. 9). When asked then if it is fair to say if the surgeon trusts the providers, then the patient trusts the provider, he responded with a booming "YES." Another urology patient, when asked what made him trust anesthesia providers, stated " I trust Dr. Z, and you know, he has got somebody working in there, in his

office. I know they got to be good, or they wouldn't be in there" (interview, tab 2a, pp. 6).

The process of anesthesia delivery itself was a huge contributor to patient satisfaction and was directly linked to meeting the patient's needs. In terms of being satisfied with anesthesia delivery, more than half of the patients commented: "It was quick" (interview, tab 3a, pp. 2), "I was in and out" (interview, tab 4a, pp. 2) and "I was awake at the end. The anesthesia makes you feel relaxed and comfortable, I liked not having to go the hospital" (interview, tab 1a, pp.2). "It didn't interrupt my whole day" (interview, tab 4a, pp. 6). "It felt that the anesthesia was a good fit" (interview, tab 1b, pp. 7).

On having their needs met, many of the same patients who commented on the process also said that their needs were met in terms of "not wanting to be aware" (interview, tab 3a, pp. 7), "experiencing no pain" (interview, tab 2a, pp. 5), "don't remember anything" (interview, tab 2a, pp. 5) and "minimal anxiety" (interview, tab 2a, pp. 4). One patient in particular, who had to have a cystoscopy done frequently secondary to bladder cancer, felt that consistency in the process of anesthesia care was crucial. He commented: "Just my own self, what I do, they have a clock up there on the right hand corner. And now I always look at that and see how long it took" (interview, tab 3a, pp. 3). This patient judged the quality of the anesthesia delivery by noting the length of time he was out. It was a fairly routine procedure, in his mind, if it took the same amount of time at his quarterly rechecks, though initially he said the two most important things for him are to be "out" and not get sick afterwards. He added (interview, tab 3a, pp. 7):

> To be out and when I was up, I'm okay. You know, I am not wobbling around and mumbling and stuff. I do wake up, they say Mr. Q do you think you can

> sit up, and I say yes, and they sit me on the edge of the table there for you know maybe a half a minute, or minutes, and they say, do you think you can walk now and I say yes. And they say the same thing every time, and nurse will grab me by the arm and help me down to the dressing room.

Only two patients in this office were not satisfied with the process of anesthesia care. The first was the dental patient who misunderstood moderate sedation and felt she woke up during her anesthetic. The second patient commented that "maybe if I was in the hospital they could have just taken me into surgery" (interview, tab 1b, pp. 2). This particular woman had a kidney stone and in the urology office it was discovered that she would need surgery to remove the stone. She had felt that if she was in the hospital, maybe they could have just wheeled her into surgery. Whether that could happen or not is not the issue. To her, she felt that it may have been a real possibility and the thought of it was very real. This affected her feelings of satisfaction because she has to now schedule an appointment to have the stone surgically removed. And her pain will persist until it is taken care of.

Patients' perceptions of personal qualities of anesthesia providers, coincided with the amount of attention patients felt they were receiving, and the feelings that anesthesia providers were competent. Additionally, "the way people treat you is a big thing" as one patient commented. He felt he was always treated good, and said he wouldn't change anything, these are all good people (interview, tab 2a, pp. 8).

Care in the Dental Office

The delivery of anesthesia care in the dental office is in many ways similar to the urologist's office. In both, whether one is have a cystoscopy or teeth extractions, the patient is the one who can decide whether they want intravenous sedation or not.

The procedures themselves can be safely accomplished using a local anesthetic technique, performed by the surgeon, but many of the patients interviewed expressed a strong desire to have sedation. One urology patient summed it up and the analogy was made several times by the dental patients: "...and I tell you what, I have been shot, stabbed, beat up and left to die, and when they talk about putting that camera up there, sorry, but I shy away from that!" (interview, tab 3a, pp. 7). A very similar comment was made by a dental patient " ...oh I would say my anxiety level was way over an 8 on a scale of 1 to 10....I was wound, hopped up, keyed up all day....very, very nervous, and very anxious. I was never fond of having shots all over my mouth while knowing exactly what is going on..." (interview, tab 11, pp. 4).

Domains of care in the dental office included nurse-patient interactions, the process of anesthesia delivery coupled with meeting the patients' needs, and personality qualities of providers. The nurse-patient interaction included some components of the pre-operative preparation, but in this analysis, the post-operative care stood out and contributed to patient satisfaction. Additionally, the attention given to patients and perceptions of a competent provider were contributors to effective nurse-patient interactions.

The preoperative preparation of the patient, by the anesthesia provider, was found to contribute to feelings of satisfaction by the patient. Patients in the dental offices found it absolutely necessary to *know* up front that they would not have discomfort or be aware, that their teeth were being surgically extracted. They expressed high levels of anxiety regarding the process, and in both settings, the patient had to pay out of pocket for the service of the nurse anesthetist. In fact, all patients in the dental office made reference to paying for the anesthesia care out-of-

pocket. The pre-operative preparation as part of the nurse-patient interaction of the dental patient was critical in alleviating patient anxiety and in the educational process of the patient. For the most part patients were satisfied with this component of their care, and expressed satisfaction:

> Meeting the nurse anesthetist...definitely helped me out a lot....I met the anesthetist and I talked to Dr. P for a few minutes....and that sort of relaxed me. I liked the opportunity to converse with each and ask more questions and not feel too hurried. ...if you would have just taken me right back...that would have jolted me...this way I just sat down and talked and that really helped the situation very much

Additionally, this patient described events that led up to his decision to have an anesthetic, and how the nurse-patient interaction developed (interview, tab 11, pp.14-15):

> Well, when I first went through this not having much experience with dentists, and I thought I was going to be given gas or, I thought it was going to be a procedure he was going to do...he asked me what do you want to do? And I said, well, I really am not crazy about getting shot up with needles and that is going to make me anxious...And what he told me, he says, truthfully for your sake and mine, it would be better if we went with the anesthesia. It helps both of us, it helps me do my job a little easier, and it is a lot easier on you. Then he explained to me, [the CRNA]. And I never knew there was such a service like you nurses going to different medical offices and doing this procedure.
> [He continues] ...he said the CRNA was out in [the city] and for me to get a hold of her...in fact I think my wife called the CRNA, and set up the time, because I was at work. We were sorta shooting for a date, we were shooting for a Friday because I didn't know about...having to go to work, and hopefully the CRNA was free. And my wife called the CRNA and the time was great. My wife got a hold of the CRNA and we lined it all up, and called the dentist back, and boom, that is what happened.

When asked if he was able to read the information provided to him beforehand, he responded, "Yes. I was given a brochure and a pamphlet...and it referred to conscious sedation..." (interview, tab 11, pp. 5).

All of the dental patients felt preoperative preparation could be improved upon by giving information about how one would feel after the procedure in terms of

pain and what to expect in general. One patient, when asked if her preoperative anesthesia instructions seemed adequate, said (interview, tab 6a, pp. 4):

> Oh yeah, that was fine. Actually I wish they would have gave me a booklet on what I was going to expect like when I went home. I wish I would have had more information—I'd be in this much pain, what's the taste in my mouth...I had to call them a couple of times to ask them. I wish they had given me a booklet to go home with...they gave me all this stuff before hand but they could have told me what I was going to get exposed to when I went home.

Another dental patient commented that he wanted to know about the anesthesia drugs: "That's what I wanted to know, like how exactly, what it does, does it block the neuro-pathways, and stuff like that, or how does it work exactly" (interview, tab 7a, pp. 6).

However, this patient may have minimized his own ability to be satisfied with care and perceived quality of care outcomes. The patient, after confirming that he followed the preoperative instructions and had nothing to eat or drink, told the nurse anesthetist that he actually ate some candy prior to coming in for the procedure. It was only after she started to administer the sedation that he admitted to eating. The CRNA was not re-questioning the patient; the patient just said,"I told her I had eaten something like when I wasn't suppose to, like I ate gummy bears...I started to get a little goofy" (interview, tab 7a, pp. 7). That was not optimal, but only posed very low-level risk; therefore it was appropriate to proceed. His violating pre-operative anesthesia orders could have canceled his surgery and that might have led him believe his care was unsatisfactory.

Patients in the dental office commented on the importance of the attention given to them as a way to feel satisfied with care. Oftentimes, statements were

made such as, "never having to wait, liked the attention, and valuing the post operative phone calls" (interviews, tabs 11, 7a, and 6a, pp.'s 3, 3, 9).

Patients appreciated the post-operative phone calls, the follow-up care provided by the anesthetist to patients. All three dental patients commented on the importance of this interaction. The following was uncovered during two separate interviews with dental patients, referring to the post-operative followup care (interview, tab 11, pp. 14):

> The CRNA called me the next morning and she wanted to see how I was feeling...she left a message on the answering machine.... She said Mr. R, this is [name], I was wondering how you are feeling this morning and if you are having any problems? I appreciate it and I'll give you my home phone number, and I would appreciate it if you would get back to me...it was nice for her to be that concerned to leave me her home phone number.

The second dental patient stated, "Yes, yes, I did value that post-operative phone call very much, and yes, her explanations did seem more than adequate to me " (interview, tab 6a, pp. 9).

Patient's perceptions of the nurse anesthetist as a competent provider also contributed to feelings of satisfaction by most of the patients. These concepts are also intertwined in the above comments from the patients. One patient recalled the CRNA using "diversion tactics" (interview, tab 7a, pp. 3) when starting his intravenous, and he thought that was nice and calming, and another patient commented that the CRNA "portrayed herself as being very competent" (interview, tab11, pp. 4).

Anesthesia delivery itself contributed to patient satisfaction, especially to meeting the patients' needs, and seemed important enough for all the dental patients to pay out of pocket to have anesthesia care. Anesthesia was a needed component of the dental process for the patients in order to be satisfied. Key points made by

the patients included: "Need to have the sedation, don't want pain, couldn't do it with out anesthesia, want to be out for the injections, and want to feel relaxed and comfortable."

One patient summed up what being satisfied meant: "Starting to relax after IV in, the procedure was quicker than I thought, loved the place, loved the people, they took great care of me, and I am now going to continue going to this dentist because they took such great care of me" (interview, tab 6a, pp.6). While many of these components of care are also part of the surgical care, the fact that they had the option to have anesthesia was key. One patient wondered who would ever think we could have "painless dentistry" (interview, tab 11, pp. 5). For such patients, oral surgery with anesthesia was a prerequisite for being satisfied with their care.

The Plastic Surgeon's Office

Plastic surgery patients' sense of being satisfied or dissatisfied with anesthesia care was more in-depth than urology or dental patients. All but one of the patients had a general anesthetic and this was not negotiable. Abdominoplasty and breast augmentations require general anesthesia.

Five components comprised satisfaction with anesthesia care: 1) components of the anesthetic, 2) being informed, 3) positive patient feelings, 4) perceptions of CRNAs bedside manner, and 5) the environment.

Plastic surgery patients had a lot to say about the components of the anesthetic itself and the effects they had from the anesthetic. For example, one patient is currently employed selling anesthetics to veterinary clinics. She appeared to have some knowledge (albeit not entirely accurate) of the characteristics of anesthetic agents used in the office. Her knowledge of inhalational anesthetics used

for general anesthesia was greater than other patients. She judged where the office was in terms of keeping up with the industry, based on the type of agents used as a component of her general anesthetic, and the related cost. She found the office was acceptable in terms of anesthesia delivery (interview, tab 1, pp. 3):

> The only thing I was concerned with was like I said, was um, what kind of anesthesia they were using. Because that tells me a lot about where the office setting is in regards to where the rest of the industry is. Because right now the rest of the industry is Sevoflurane, which is very, very expensive ...I know that. And in the office setting I couldn't pay for it. I mean since I am paying for this myself, and I know in the animal industry it is the same, it is probably 25 times more expensive than Isoflurane is right now, so that wasn't an option...I didn't think they would be using in here yet, it is going to be everywhere.

The effects of the anesthetics and how the patients felt the anesthetics worked for them contributed a great deal to the satisfaction felt by the patients.

Several of the patients commented that they paid for the anesthetic out of pocket, as well as for the plastic surgical procedure itself. Satisfied patients commented:

- "Not waking up was important" (interview, tab 1, pp. 3)
- "The anesthetic was good" (interviews, tab 1, pp. 12, tab 7, pp. 8)
- "I would recommend it" (interview, tab 1 pp. 8)
- "I wasn't nauseas" (interviews, tab 3, pp. 10, tab 7, pp. 5)
- "I was discharged when I was ready" (interviews, tab 3 pp. 10, tab 7, pp. 5)
- "I had enough time to wake up and get a sense of balance" (interview, tab 6, pg. 14)
- "The wake up was easy" (interview, tab 8, pp. 7)
- "I went out right away" (interview, tab 8, pp. 3)
- "It was a perfect wake up" (interview, tab 8, pp. 3)
- "I was totally asleep" (interview, tab 10, pp. 4)

The perception that one judged the satisfaction of an anesthetic as not being aware and not waking up, again surfaced as a strong component contributing to satisfaction. The majority of these procedures were performed under general anesthesia, but one patient in particular thought that being in the office and having surgery may mean that she would receive *less* of an anesthetic, as compared to being in the hospital. Her pre-operative interaction with the nurse anesthetist illustrated her concerns (interview, tab 1, pp. 3):

> I told him I was concerned about was that I better not wake up. I don't care what he does or how far he has to put me under, I said just be sure I don't wake up. I don't care what you give me, you know, or how long it takes me to wake up afterwards, I just don't want to wake up while it is happening. I mean I know that has happened very, very rarely in an office setting. That is kinda like in the back of your mind, you're not really sure, I mean I did ask him what happens....I did, I talked to him about that also because in the back of my mind I knew that they weren't going to put me under as far....if it is something that is superficial, it's skin involved, you don't put....you use the least amount of medication that you can to get the job done...because you, it's more difficult to wake somebody up afterwards.

While this patient was satisfied and did not have any awareness or recall while under general anesthesia, this concern illuminates what patients must understand to be free of anxiety.

In contrast, one patient not only did not want to be aware of what was going on during her procedure, but did not want to know anything about the anesthetic at all. She wanted to get in and be "put out" (interview, tab 8, pp. 3) as quickly as possible, not know anything, and wake up and go home. And she certainly did not want any ill effects related to the anesthetic. When asked how her questions were answered regarding her anesthetic, she replied (interview, tab 8, pp. 5):

> I felt like I didn't have any questions. Again, I didn't even ask what they put you out with...it just doesn't matter...you know. There are people who want

> to know everything exactly. What you put me under with, how long am I going to be there...and I was glad I was under...and I don't remember anything.

The response of the patient given above did not seem to be the typical response of those patients in the plastic surgeon's office. However, most of the patients wanted to be informed of everything that was going on in terms of their anesthesia care. Surprises were not going to be tolerated. They wanted to be told in great detail before their intravenous lines were started, they wanted the nurse anesthetist to explain what he was going to do in a step-by-step fashion, and they wanted very clear post-operative instructions. Many of these individuals researched the procedure and the details of the office setting on web sites.

The following is a description from one patient of what was valued in terms of knowing what is going to happen (interview, tab 6, pp. 7):

> Way different than going into a dentist office where I always have that anxiety of them shooting me with some sort of local anesthetic. I hate that and I am always anxious about that. I didn't feel any kind of anxiety this time, and I think [CRNAs name] had a wonderful bedside manner in the sense that he walked through and talked through what he was doing and what I was going to feel, like when he said you're going to feel a little prick and then a little burn like, I didn't feel much of a prick and I didn't feel much of a burn so um, you know, it is like what he is saying what I am going to feel and I validate it down the path, and I think your mind just like eases up and gets comfortable. I mean I really think that is a wonderful technique to say this is what you're going to feel now and it helps eliminate some of that anxiety. ...I remember the days of an old dentist who would put the fear of god in you by ramming a needle up the top of my jaw without knowing what is happening, and just absolutely just fearing going to the dentist.

Another patient described her anesthesia care just prior to her anesthetic (interview, tab 3, pp. 7):

> I went there, and I remember you know, he said are you comfortable, he said, you get to sit up on this table, this fine table, and all the way along they were joking and talking to me, and I just looked like one of the gang if you will, and I like that. And I said, no this doesn't feel right, if it wasn't and they said, okay, just tell me when you're comfortable. He says now I need you to hang your hand over to the side which I did. And he would start tapping it, and

> getting the veins to come up and get ready to put the needle in. And he was telling me every step of the way what he was doing which is fine. And I—that is the kind of stuff I like to hear—I want to hear—what are you doing.

Additionally, a third patient wanted details of what would transpire in an emergency situation (interview, tab 1, pp. 3):

> I mean I did ask him, what happens in the case of an emergency? If I am on the table, who do you guys call, what happens?

Similarly another patient said (interview, tab 2, pp. 9-10):

> I think they should just explain it a little more, more details, like what could happen after, how I would be feeling, yes, just basically the side effects, like how long you will be feeling like that after...[and in terms of emergency care, the patient's mother was present and offered the following] ... I was a little nervous about her having surgery in a doctor's office because the first things that I think of is those risks that you are taking, say if your heart fails...I mean it is something that always could happen...is there gonna be any kind of emergency equipment here if that should happen...

The patients placed emphasis on wanting to know what was going to happen to them postoperatively. They also valued the attention that was given to them in the post-operative recovery room (interview, tab 2, pp. 12):

> [The care of the patient in the recovery room in this scenario was provided by the same CRNA who administered the anesthetic]. I think he was very comfortable...I mean I felt very comfortable with him....to know he was still there watching...that he didn't just move me into a room and because it is an office, and they were sitting in another room not paying attention, he was there and I felt comfortable with that and he was talking to me one-on-one, that was nice. Like in a hospital, you never see the anesthesiologist, and never talk to somebody to know that everything went well, you know, except for the doctor when he comes out, and I mean you hear them, but you don't hear the other person who is really watching my heart and everything, and everything that is going on with me, that everything is going okay, so I was comfortable with that.

For these patients, having one provider that they trust improved their satisfaction and the expanded role of the CRNA enhanced that.

Another patient learned that not being hurried to leave improved her

experience. She had a procedure performed in the same office under general anesthesia month's prior. During her recovery period within the office for her first procedure, her au pair was given instructions about her post-operative care. The au pair spoke broken English and communication problems surfaced when the patient arrived home. In asking the patient what contributed to her satisfaction with post-operative care for this second surgery, she responded (interview, tab 6, pp. 14):

> And you know how sometimes you just go through the formality of sitting through things as an aftermath and you think yeah, yeah, yeah, just get me outta here. The second time around I was appreciative of the fact that when I woke up I got enough time to get my sense of balance and stuff and just get out of there. So, it was very appreciated the second time around.

Patients described their positive feelings that were linked to being satisfied with anesthesia care in the plastic surgical office setting. When asked to describe how they felt about their anesthesia care, terms used often by the patients included: "feeling comfortable" (interview, tab 1 pp. 5), "not shaky or sick" (interview, tab 1, pp. 5), "no nausea" (interview, tab 7, pp. 7), "feeling relaxed, minimal anxiety, feeling warm and good" (interview, tab 1, pp. 10), "feeling safe" (interview, tab 4, pp. 4), "no reason to be nervous, no big deal, would do this again, feeling connected" (interview, tab 3, pp. 3), "no fears, trust, feeling special and safe" (interview, tab 7, pp. 13), and "cared for" (interview, tab 8 pp. 5).

One key facet of patient satisfaction was feeling "connected." Comments on how this experience seemed different than her previous hospital experiences, a patient from the first plastic surgeon's office said (interview, tab 3, pp. 3):

> Actually it is a better thing because I think when you have that connection with that person you feel they are more connected to you and more concerned because when you are in a hospital and I have been several times for outpatient things, you know , they don't come up, they don't check on you, they don't call you by name, they read your chart, they see your number,

> they see what you're there for, and it's kind of a disconnect. You know, shoo em in, shoo em out, shoo em in, shoo em out, an um, so I'm always not sure they know what is best for me because they are not really in touch with me...with the nurse anesthetist in the office you had the one on one and you could tell him eye to eye, I have an allergic reaction to this, and this, and this.

Or as another patient put it (interview, tab 6, pp. 8):

> There is a huge connection to me in walking through—here is what I am doing—here is what it is going to feel like—and what it does to comfort me and eliminate the anxiety because you do you know, you validate in your mind, this is what it is going to feel like then you gain a confidence that you that there is integrity in what he saying. So, I like that. I think that is a wonderful anxiety reliever.

The perceptions that the patients had of the nurse anesthetist's bedside manner or mannerisms in general, was readily identified as contributing to quality of care and satisfaction with the anesthetic process. Patients noted that the nurse anesthetists appeared competent, reputable, thorough, answered questions adequately, knew what he was doing, on top of it, calming, re-assuring, kind, calm, concerned, gentle, and understanding.

While the definitions of quality care and patient satisfaction have not been agreed upon in the literature, the patients interviewed in this study offered their own ways to describe the nurse anesthetist and the quality care they provided. The qualities of caring, listening, spending time with patients, hearing, so often associated with nurses in general surfaced when the patients described how they felt about the care delivered by the nurse anesthetist. It is not unheard of to hear patients speak of the care given to them by other advanced practice nurses such as nurse practitioners and nurse midwives as different than that received by a physician. Nurses usually spend more time with patients, explain things in greater detail, offer caring attitudes more than curing diagnosis, and have been trained to

proceed in this manner. One patient summed this up rather clearly when asked how she felt about having her anesthesia care delivered by a nurse rather than a doctor (interview, tab 3, pp. 5):

> A nurse practitioner that was in my doctors office when I was undergoing some female surgery, I depended on her, and relied on her more than the doctor, and I became more acquainted, I called her in her home, my confidence in her was there, versus the doctor. You know, he wasn't always available, so I feel that maybe when you get to the certain level, if you get to that level of the anesthesiologists, that maybe you've been disconnect because it becomes routine for you, it becomes just standard procedure, and that's all you're there for.

Patients commented on the amount of time that the nurse anesthetist spent with them, which depends on the amount of time the surgeon allows. The physician in the first plastic surgeon's office wanted the positive interaction between the anesthetist and the patient, and allowed them as much time as needed to proceed with explanations and offer caring attitudes.

In contrast, the second plastic surgeon's office processed several patients through the surgical process in a short period of time. The interviews with these individuals, while the patients felt their care was generally satisfactory, had some conflicting opinions about the anesthesia care delivered to them, or even minimal opinions because they simply did not have time to develop a relationship with the nurse anesthetist.

The office of the second plastic surgeon met all the standards of care previously mentioned; and it was clean and productive and efficient, but was run more like a business. Time was money, and wasted time was money not made. The surgeon appeared to set the tone in this environment, and three of the patients commented that (interview, tab 9, pp. 2):

> He talked so fast, and I was a little uncertain, I still felt like I had a lot of questions, and as soon as I walked in they said c'mon back. And read over these papers, sign these, put this on, and I was reading everything slowly, and even before I was finished they said I need to get you back in now, and actually I was disappointed in it only because he talks so fast I didn't have any idea...I mean I knew what he was talking about only because I read the pamphlet already but he talked so fast...it was something like a speech...you know like I had a robot sitting in front of me...you know the office people were all nice...and I wish there was a video offered so when I was knocked out...I would have known more...I felt like an assembly line, okay, you know come—in and out, in and out—that is basically what I felt like.

It was difficult for these patients to explain much of how they felt about their anesthesia care because they simply had very limited time to become acquainted with their anesthetist and ask questions. It was surprising that, as consumers of the care, they didn't demand more time to ask questions and inquire. Many of these patients, because they were moved through the process so quickly, do not remember anything about their recovery room stay at all. They do not remember being transferred to the recovery room, or even who their recovery room nurse was. But this did affect the degree of satisfaction for several of these individuals. One patient stated (interview, tab 9, pp. 4):

> When she woke me up from it...you know she said wake up, it's all over, and then she helped me put my shirt on, and it was like okay, you got to sit up. I didn't feel like it was...would you like some juice before you go or something...you know to get you home or something...it was basically, okay I'll help you put your shoes on. It was pretty fast.

Some individuals felt the exact opposite. They wanted to get in, get it done, and get out. In terms of general satisfaction with anesthesia, there weren't any complaints or dissatisfaction. One female patient was in a tremendous amount of discomfort but stated that, once she had her prescription filled for her post-operative pain medications and took them, she was fine and amazed at how good she felt

(interview, tab 10, pp. 10). None of these individuals had any untoward clinical problems either. They all did quite well, even though they felt they were moved through the process expeditiously.

The environment in the office-based setting influenced the patients' level of satisfaction and quality of care. Many found the casualness of it comforting. Oftentimes the word "relaxing" was used. Privacy was often seen as improved, and patients felt they were not exposed to the same degree of privacy in hospital environments. One patient, noticing that the physician walked into the office after her arrival in the morning in casual clothes with a cup of coffee in his hands, commented (interview, tab 6, pp. 12):

> Oh there is probably another thing that was really significant in terms of establishing the environment and that was like they do this as early in the morning, earlier than they usually see patients and they all came in wearing jeans. All in jeans, even the doctor, and I was thinking how funny it was that here is someone that is going to be cutting me open and he walks in with a latte and pair of jeans. There was absolutely nothing offensive about it. It was just you know, that was how calming it was. That had a very calming affect on me as well. It also shows me that ...an aura of confidence...like someone who isn't uptight...I am used to doing this...and I think that just helps you continue to gain your confidence in him.

Other patients noted that (interview, tab 7, pp. 4):

> I think I was comfortable, very comfortable with it and gave me a one on one opportunity to meet the folks that would be personally involved with me and I sat and talked to the CRNA prior to. They would let me do what I wanted to do. And it give you that flexibility to give you that comfort zone to where you want it versus the hospital where you're like a number, made to feel more like a number.

> (interview, tab 8, pp. 8):

> Convenience, right. Absolutely have to have that. They, it was convenient. I mean it was in and out—I mean it was ...what can I say...it wasn't just they were there to do a job, they got it done and I was out. I mean, time is money with me and when you go to do it...They also did an excellent job on the privacy...I didn't want to talk about it in front of too many people and the way

> they handled it, it was, well it's a business. They do this every day. They don't make you feel that way, but...

Lastly also in terms of thoughts about surgery in an office (interview, tab 7, pp. 12):

> I think it makes me feel a little bit more at ease, a little more comfortable that there is not a lot of people running around, but I am used to, on the other hand, if it were a really big procedure, I think I'd feel little bit more comfortable being in a hospital setting just because you have everything...and maybe you do in an office...you have everything you need in case of an emergency...there is just something...being in office setting...the equipment, the technology, the people around to help you at that minute in the hospital... I guess that is the only thing, but you've got that versus the fact that it is kind of nice not to have all those people around ...you feel kind of comfortable...I don't want a lot of people around.

This individual appeared to understand the trade off between having a lot of people around is good in case of a crisis versus wanting the intimacy of just a few health-care providers in attendance offering care.

In neither one of the plastic surgeon's offices did the patients say they wouldn't repeat the anesthetic process again for similar types of procedures. They all said at the time of the interview that would do it again if the opportunity arose.

Overwhelmingly, patients that were interviewed were satisfied with their anesthetic care and were more than willing to share what was important to them having gone through the surgical experience in the office setting. The following chapter discusses this research while reflecting back to what was previously found in other situations and in previous studies. Conclusions relative to these findings are drawn, and recommendations for further research follow.

CHAPTER 5

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

For the past several years, many states have experienced substantial legislative activity concerning office surgery and anesthesia delivery within the office. Depending on the political structure of the various states, this activity has been in the form of either adopted legislation, adopted regulations, position statements or guidelines developed by medical boards or state medical societies, or task forces and workgroups with the purpose of making recommendations for further actions. The apparent goal of the activity is the 'regulation' of office-based surgery in all 50 states. Anesthesia delivery, as well as consideration of who is competent and qualified to administer the anesthetic in office settings, is deemed a key element of office surgery, and is addressed in all legislative activities. Stakeholders of office surgery such as policy makers, insurance companies, providers, and patients, all express concerns and opinions regarding this setting. To date, there was very little research conducted regarding outcomes of care following surgery and anesthesia in office settings. Decisions were and are being made relative to the practice setting itself, as well as determining who is allowed to administer the anesthesia in the office, without adequate studies to inform decisions. Clinical outcomes of anesthesia care, and patient satisfaction can serve as a valuable source of information and should inform determination of effective health care (Kellie, 1991).

Developing better understandings of the office setting, as a place for surgical services, was the goal of this research. Nurse anesthetists and physician anesthesiologists administer anesthesia in offices in Michigan. Also, the role of

anesthesia providers in office settings was thought to be different from hospital and ambulatory surgery environments. However, it was not known exactly how that role differed, and how this influenced patient satisfaction with care, if at all.

This void in information for policy-making has a long history in discussions about regulating office-based surgery with anesthesia delivery. This example of New York states proves illustrative.

Policy-Making in New York

The report of Senator Roy M. Goodman, Chairman, Senate Committee on Investigations, Taxation, and Government Operations, New York, titled "Problems with Office Surgery" (February, 1999), provides the committee's recommendations on how to improve practice (office-based surgery) they believed were "rife with problems." Concerns about office-based surgery came to the attention of the New York Senate Committee via correspondence from a constituent physician. The report appeared to be based on limited information. They reported:

- Compared to a hospital or an ambulatory surgery center, an office is without a doubt the most dangerous place in which to undergo an anesthetic
- Anesthesia equipment in offices is frequently out of date and poorly maintained
- Monitoring of patients is frequently neglected in office-based surgery
- The surgeons were unqualified
- Office sites were filthy

The committee used these findings to recommend that offices must be regulated. However, as had been the case with the ASA Closed Claim Project (Biddle, 1999), the report suffered from lack of information on the patient population from the cases

arose, doubts about how representative cases are (as only the absolute worse situations were included), and there may exist the arbitrary exclusion of certain types of cases (as in the dental trauma cases in the ASA study).

Thus, the committee claims that all office-based surgery is rife with problems may be misstated and the realities of what constitutes the problems are not understood. Though the Senatorial Committee cited several newspaper and magazine articles, as well as interviewed anesthesiologists, some who wished to remain anonymous, their partial focus on the un-supervised nurse anesthetist as a contributing factor, was not supported in the medical or nursing literature. In fact, several of the offices thought to be rife with problems were staffed by anesthesiologists or had no anesthesia provider at all, and not nurse anesthetists. Several of the unfortunate patient outcomes, both in New York and in other states, had nothing to do with anesthesia care itself (or provider supervision), but often was the result of a multitude of variables contributing to the poor outcomes such as ophthalmologists performing plastic surgery, filthy work environments, no provisions for emergency care, and other clear violations of existing professional codes of practice. Yes, the central recommendation of the committee concerned having (physician) anesthesiologists oversee CRNAs.

Would supervision of nurse anesthetists solve the problems? This pattern of depending almost entirely on physician anesthetists for input about office-based surgery and anesthesia continued in New Jersey. The Executive Director of the New Jersey State Society of Anesthesiologists was the "main architect of that state's office surgery regulations," and he believed "an office is indisputably the most dangerous place in which to undergo anesthesia." This physician and his colleagues

supported regulations for the administration of anesthesia in all settings. They proposed that general anesthesia administered by a nurse anesthetist occur only under the supervision of a physician credentialed to provide general anesthesia, in other words an anesthesiologist. Though CRNAs work independently in office-based settings, we hear nothing from them in these reports. Meanwhile representations about difficulties in office-based surgery lead others to believe ALL problems related to anesthesia in the office settings would be negated, and safe and quality care would prevail if anesthesiologists supervised nurse anesthetists.

Many worried that physician anesthesiologists attempted to capitalize on the misfortune of others by claiming that poor outcomes would not have occurred, or could be preventing from occurring, if there were a supervisory anesthesiologist. There was substantial concern among providers that the proposed regulations did not get at the issue at hand. Would supervision of nurse anesthetists solve the problems? The real issues at hand were never quite addressed: office settings must be appropriately set up to allow providers to give quality care and providers in these settings must deliver quality care.

In New York, office-based surgery guidelines had been published by the New York's Department of Health (Tobin, 2002). Nurse anesthetists in New York, who practiced independently in office settings that demonstrated safe and quality care, now could not do so unless an anesthesiologist was supervising them. While nurse anesthetists don't dispute that offices with any and all patient care problems should be addressed immediately, they feel they have become the scapegoat for accusations and mistruths. The New York Society of Nurse Anesthetists filed a lawsuit against New York's Commission of Health, the New York State Department

of Health, and the New York State Public Health Council. The lawsuit challenged the guidelines which contained supervision requirements that discriminated against CRNAs. On November 25, 2001, a New York lower court judge ruled that these guidelines were 'null and void and of no force and effect' (Tobin, 2002). The lower court in New York did not discuss whether the provisions of the guidelines were good or bad per se, but that the state administrative agencies do not have unbridled authority to govern office practice. So, back to the drawing board in New York. The question remains: What is required to get to the issue at hand: improving office surgery practices, ensuring quality care and patient satisfaction outcomes, and preventing provider discrimination for those who desire to work in these settings? Research is needed to discover the causes of the problems and recommendations can then be made based on scientific inquiry.

This research set out to discover what was going on the office-based surgical settings in Michigan. First, for the five offices in Michigan studied the process is not "rife with problems," two plastic surgery, one urology, and two dental. Office-based surgery itself is not regulated in Michigan, but surgery practices in these five offices is in accordance with the physician's license and specialty, the nurse anesthetists work within his/her scope of practice, and offices function within the Michigan Administrative Rules.

The physical environment for all five offices, both in general and in relation to provisions for anesthesia care, are modern, clean, efficient, productive, and personalized. In fact, patients preferred the one-on-one care provided, and this played a role in their degree of satisfaction. The anesthesia equipment was not antiquated, and each office followed appropriate policies to ensure the equipment

was functioning adequately and appropriately, routines similar to those used for hospital-based anesthesia equipment. The monitoring modalities used (anesthesia patient monitoring practices and systems) by each of the nurse anesthetists in all five settings were in compliance with the AANA Standards of Care for Office Based Anesthesia (1999). In fact, one of the nurse anesthetists participating in this research was a co-author for the AANA Standards of Care and participated actively in surgeon/dentist education for those who practice in the office. Education between surgeon and providers in all five offices occurred on a fairly regular basis. The anesthetic techniques used by the nurse anesthetists complied with literature recommendations, contributing to patient satisfaction and safety, and appropriate for out-patient environments. Recipients of care did not report problems such as prolonged recovery, nausea and vomiting incidences higher than what is considered an acceptable threshold, and high levels of post-operative pain. For these settings, findings support Moller's (1993) claim that we have become so good at preventing catastrophes that perhaps more attention now needs to be diverted to the "minor morbidities" that have an impact on patient satisfaction.

Common was a central attribute of quality of care, and this was overlooked in the New York Senate reports and research literature. Effective communication made a substantial contribution to positive patient outcomes in office settings. None of the offices in Michigan studied were legislatively regulated, or supervised by physician anesthesiologists, yet quality outcomes and patient satisfaction outcomes were overwhelmingly positive. Effective communication between surgeons and anesthetists encompassed: 1) mutual agreement about patient-selection criteria, 2) mutual agreement of appropriate anesthetic and surgical processes within the office,

3) productive interactions regarding patient treatment decisions without the barrier of a professional hierarchy between nurse anesthetist and surgeon, 4) following standards of care for office-based anesthesia, and 5) a respect for the knowledge and care administered by each of the providers, and the impact this has on patient satisfaction.

In a few instances where patients were not satisfied with their anesthesia care in the office setting, a breakdown in communication was uncovered. Sometimes the breakdown was between anesthesia provider and the patient. The components of dissatisfaction included the patient wanting to know more about the process of anesthesia, feeling the preoperative holding room was too small, and not understanding what sedation means versus a general anesthetic.

In the office setting, providers can better guarantee high percentages of good outcomes will be good if components of effective communication are employed. For example, being highly selective of patients for surgery makes a huge contribution to preventing poor outcomes. Providers who work in hospitals don't have this luxury. They are obligated to operate on, and administer anesthesia to, all that need the service. Because of the need for advanced interventions, a prudent office-based provider would not accept patients with a poor health history, morbid obesity, or renal failure. This difference in resources is a major difference between the office setting and the hospital setting, and patient selections promote patient safety.

The role of the nurse anesthetists differs in office-based settings as compared to traditional hospital settings. Much of the nursing care, including the administration of the anesthetic, was left to the nurse anesthetist in the office setting, which served to promote patient satisfaction. Nurse anesthetists were autonomous

and independent anesthesia providers, and the collaboration with surgeons is noteworthy. This affected quality care in a variety of ways. The lack of professional boundaries promoted quality care, even if patients were not aware of this. For example, several times collaboration between surgeon and nurse anesthetists prevented poor patient outcomes, yet the patient did not realize this. This corroborates a study by Baggs and Schmitt (1997), whereby ten intensive care unit nurses and 10 medical resident physicians were interviewed to compare their perceptions of the process of nurse-physician collaboration. They identified three outcomes of working together: improving patient care, maximizing information and planning care, and feeling better in the job, that is having a pleasant work atmosphere and learning.

Characteristics of nurse anesthetists in office-based settings affected quality of care and patient satisfaction. Fcr example, some patients were so satisfied with the anesthetic that they referred others to the physician and anesthetist in dental and plastic surgeon offices. More data are needed to ascertain whether anesthetist characteristics are as central as effective communication.

Several studies focused on taking patients' perspectives into account, especially discovering how patients judged quality care and if they were satisfied or not with their care. The emphasis on patient's perspectives of medical care was consistent with health policy studies (Tarlov, et al, 1989). Ashley and Strasser (1997) state gathering data from patients themselves is accepted as a key component in the quality equation, and patients are an excellent source for evaluating several aspects of medical care. In this research, patients for the most part, were quite verbal and readily offered information about their anesthesia care,

both aspects they were satisfied with, and those they would change. Patients want to be informed, want to be heard, want explanations, but do not want to be aware of what was going on during their surgery, irrespective of the type of anesthesia used. Most patients interviewed paid out-of-pocket for the service, and they wanted quality services. Some wanted to know how they would be cared for in emergency situations. None of those interviewed had a preference for physician anesthesiologists or nurse anesthetists as long as they were cared for in the way they expected.

Wilde, Starrin, Larsson and Larrson (1993) found four dimensions to patients' perceptions of quality of care: the medical-technical competence of caregivers, the physical-technical conditions of a care organization, the degree of identity-orientation in the attitudes and actions of caregivers, and the socio-cultural atmosphere of the care organization. Patients interviewed in their study emphasized medical-technical competence as the desire to get cured when one is sick, and placed importance on many caregivers with knowledge to give care skillfully. In the office-based study, competence was valued, but not questioned. The patients who had surgery in the office setting valued their surgeon and dentist. And, if the surgeon or dentist was working with the nurse anesthetists, the patients assumed they must be competent. In addition, patients in the office-based study were able to identify tasks by the CRNA that demonstrated competence, such as answering questions regarding emergency care, and educating patients on post-anesthesia care.

Wilde also found patients desired care with a human face, caregivers that showed interest in and commitment to patient situations and treated them with respect. In the office study, patients found great satisfaction with the nurse

anesthetist's care when procedures were explained in a step-by-step fashion, with attention given to the patient unequivocally, and with no surprises in what happens next.

Henderson (1997) studied patient participation and found that 'nurses' knowing the patient' has a positive impact on patient participation. In the office setting, patients placed much value on anesthetist interactions, preferring one-on-one care and feeling connected. Several patients from all three surgical services and all five settings commented on the attention given to them by the nurse anesthetist and this contributed to their level of satisfaction. In the dental offices specifically, a few patients commented on the value of the pre-operative and post-operative phone calls made to patients by nurse anesthetists. In one plastic surgeon's office where the fast pace limited contact between CRNA, the patient's perception of quality of care was positive, but satisfaction was not.

Irurita (1998) also found that lack of time for nurses to spend with patients inhibited the development of the nurse-patient relationship, and she found this inhibited quality of care. For the patients in this study, satisfaction with nurse anesthesia care was more apparent for those offices where time was allotted for a relationship to develop. Irurita also found that patients equated quality of care with technical competence and the establishment of an effective nurse-patient relationship, as well as the nurse possessing the personal attributes of empathy and compassion. Several patients in the office-based study commented on the connectedness and the relationship that developed between themselves and anesthesia providers.

Conclusions

Office-based surgery has many components different from hospitals that affect quality care and patient satisfaction. The characteristics of the office environments themselves enhanced efficient and quality patient care. Being organized in terms of staff responsibilities and having limited numbers of care providers was noted. While the number of patient-care providers was dramatically limited compared to hospital settings, each provider knew their role and carried it out expeditiously and competently. Patients felt they had more one-on-one care and felt connected to their providers. Accessibility to the offices and to the providers was not problematic for the patients, and the personal convenience of the surgical process in the office settings was found to be valued. Some of the offices appeared to have a high workload and moved several patients through the steps of surgery rather quickly. While this did not affect quality of care, for a few it hindered patient satisfaction. Some experienced a speedy peri-operative process and felt safe but rushed. They wanted more time during the pre-operative and recovery periods to ask questions and be better informed. In contrast, several patients valued their time and wanted to be "in and out" as quickly as possible. All offices were modern, clean, and adhered to professional standards specific to each service.

The patients often commented positively on the competence of the anesthesia providers and did not express preference between physician anesthesiologists and nurse anesthetists. Post-operatively (during the interview) it was discovered that several patients did not realize (even after being informed via consents, pamphlets, and verbal interactions) that their anesthesia provider was a

nurse anesthetist. This, however, did not affect their level of satisfaction with the anesthetic process. Patients trust their surgeon, and therefore believed that the nurse anesthetists could be trusted or the two would not be providing services together. Patients did want to know from their anesthetist what provisions were made for emergency care, as well as an understanding of what the anesthetist was going to do in a step-by-step fashion. They wanted to be safe, unaware, without pain during the anesthetic or afterwards, and cared for in a personalized manner. Most wanted an in-depth understanding of all that was going to happen, and when this acknowledgement was gained, positive satisfaction resulted.

Patients who had surgery in the offices studied fit the selection criteria for being candidates for office-based surgery and anesthesia. All patients were without pre-existing severe systemic diseases and did not have questionable health histories. None experienced untoward clinical outcomes during the anesthetic or post-operatively.

The roles of the nurse anesthetist were expanded in the office setting compared to those in tradition hospital settings. Steps of the pre-operative process, including patient education, were found to be appropriate most of the time. A few patients desired more information, specifically in the faster-moving facilities, and related to post-operative expectations. Anesthetic delivery and management as well as post-operative care, was carried out safely and in accordance with what is appropriate and suggested within the profession of nurse anesthesia. Each nurse anesthetist followed the AANA Standards of Care for Office-Based Anesthesia, used adequate monitoring for the types of anesthetics and surgeries performed, and did not discharge patients from the office until the patients physiologic status was

returned to its pre-operative state. Several patients do not remember the recovery room stay and while this did not affect the quality of care, a few commented that they wanted to be more clear-minded before discharge.

Effective communication between the nurse anesthetist and surgeon impacted quality care and patient satisfaction at all levels of the surgical process. The surgeons and the nurse anesthetists worked in a collaborative manner and demonstrated professional relationships based on mutual trust and respect. The communication between providers strongly contributed to patient safety and the promotion of positive clinical and patient satisfaction outcomes. This collaboration allowed the surgeon and the anesthetist to work in a synergistic manner to provide safe quality care that ultimately led to a better guarantee of good outcomes.

Recommendations

Two questions remain: should office-based surgery with anesthesia delivery should be a regulated practice similar to that in hospital settings and would the regulation of office practices eliminate the problems reported by the Senator in New York?

In this study, physician office practice is not legislatively regulated, nor did anesthesiologists supervise the nurse anesthetists. Both surgeons and CRNAs upheld their respective standards of care and practice. There were no situations identified as rife with problems. It remains problematic that regulations forced in other states favors the physician anesthesiologist over the nurse anesthetists, and this fails to appreciate or understand the scale and scope of problems identified in other settings.

The office-based surgical setting does have fewer safeguards. It is not applicable or suitable for all patients to have surgery and anesthesia in this setting. It appears that following existing standards of care for surgeons and anesthesia providers promotes quality care. Providers who give individualized and personalized care enhance patient satisfaction, quality care, and safety in this setting.

In terms of what to suggest for further research, it does not make sense to analyze outcomes of anesthesia care in the office setting comparing anesthesia providers, or comparing nurse anesthetists working independently with those supervised by physician anesthesiologists. One would have to impose restrictions to nurse anesthesia practice for one group by mandating anesthesiologist over-site, and have the control group work without the over-site. It does however seem make sense to suggest that anesthesia care and surgical care in this environment be subjected to some type of inspection process or mandatory reporting mechanism. For patient safety, offices should be required to work within a health code (or similar mechanism) to ensure such things as sterile environments as well as qualified providers working within their practice guidelines and scope. Additionally, there should be continuous input from patients regarding how their perceived their care and whether they were satisfied or not.

Oftentimes accreditation processes are mandated by professional organizations to promote provider adherence to suggested practice guidelines. Some providers perceive this as policing and feel ambivalent about the process. Why should those who provide high quality competent care have to be subjected to processes developed because of a few incompetent providers? They feel those who are poor providers should be dealt with on an individualized basis. Additionally,

accreditation processes tends to be costly and without any guarantee of positive outcomes. For those who are competent, qualified, and providers of quality care, they don't want to pay a price for those who are not practicing quality medicine.

An outcomes study on a much grander scale is needed, one that is similar to the Medical Outcome's Study. The structure of care, the process of care and the outcomes of care, both clinical and patient satisfaction, should be addressed across different office settings and across demographic regions. This would assist policy makers to determine whether variations in patient outcomes are explained by differences in office practice patterns, as well as how technical and interpersonal styles of providers affect quality outcomes and patient satisfaction outcomes. For anesthesia outcomes purposes, this would not (or should not) discriminate against providers, but rather assess adequacy of office-settings and provider characteristics that contribute to patient satisfaction.

This study offered some preliminary yet strong findings of how effective communication contributed to quality care, patient satisfaction, and positive outcomes. Further studies need to be carried out assessing the role that communication and collaboration has on improving patient satisfaction in the office setting, as well as a better determination of factors that can predict favorable patient outcomes.

APPENDIX A

Artifacts

Office #1

A. Office Anesthesia Services, Consent to Receive Anesthesia
B. Telephone dialogue--Notes
C. Pamphlet, Description of a Surgery
D. Pamphlet, Welcome to Our Office
E. Post operative Instruction Following Facial Surgery

Office # 2

F. Anesthesia Data Collection Tool for Quality Improvement
G. Newspaper Article, Detroit News: Doctors Offer a Saline Solution (Handout from MD Office
H. Pamphlet, The World's Best K
I. Pamphlet, Description of Services

Office # 3

J. Pamphlet, Urology Services
K. Pamphlet, Description of Services
L. Pamphlet, Description of Services

Office # 4

M. Business Card (CRNA)
N. Correspondence to Patients
O. Correspondence to Patients, Anesthesia Care Plan
P. CRNA Scheduling format
Q. CRNA Scheduling format
R. Pamphlet, Conscious Sedation

Office # 5

S. Policy #3, Patient Selection Criteria for Office-Based Anesthesia
T. Data Collection Tool for Continuous Quality Improvement
U. Correspondence to Patients, About Intravenous Sedation

APPENDIX B

Demographic Data Tool

Office number

Patient number

ASA number

Gender

Height

Weight

Allergies

Significant PMH

Significant PSH

Anesthesia start | Anesthesia stop

Surgery start | Surgery stop

Diagnosis

Procedure

Anesthesia type

PACU start | PACU stop

Who recovered the patient?

List all agents used by CRNA

APPENDIX C

Data Collection Instrument

Open-Ended Interview Protocol for Patients

1. Tell me about yourself and how you decided to come to this office to have your surgery/anesthesia. Possible Prompts & Follow-ups: While putting patient at ease, seeking demographic information, plus information about decision to have surgery in an office setting, pre existing information about surgeon and CRNA as anesthesia provider, knowledge about the environment being non traditional, knowledge about anesthesia and whom anesthesia provider would be. What did you know about nurse anesthetists? How did you know the information you did about nurse anesthetists? Description of office setting itself, opinions of surgery suite within office setting, comfort level with physical environment.
2. Can you describe in detail all the feelings you had when you first met the person who introduced himself/herself to you as the person who would give you an anesthetic for your procedure? Possible Prompts and Follow-ups: How the introduction made? How were your questions answered for you regarding your anesthetic? How did you feel about trusting this person to give you an anesthetic? What were all the activities/tasks performed by the CRNA during the time of the initial meeting? How were your educational

needs met by the CRNA during this initial introduction? What were the various feelings regarding safety that you had during this introduction? Ability to disclose information to anesthesia provider.

3. Can you describe in detail all the events that transpired in the time frame from meeting your CRNA until the time you actually started receiving your anesthetic medications? How did you feel during all the different events (listed)? Possible Prompts and Follow-ups: Details of tasks provided by CRNA, established feelings regarding trust, or lack thereof, organization of anesthetic care, quality, safety, feelings of comfort, anxiety, basic psychological needs being met, feelings of convenience of entire anesthetic process during the time period, effects and timing of amnestic medications, questions answered and explanations regarding anesthetic, offered by CRNA.
4. What do you remember about your anesthetic itself? If you did not receive a "general" or total sleep anesthetic, what parts of the surgery do you remember? Was their any memory or details during the anesthetic that you can explain to me? Possible Prompts and Follow-ups: What were all the feelings you experienced about this entire process? What did you make of all these feelings? Can you compare them to anything you have ever experienced in the past? Can you explain your comfort level during the procedure if you were not totally asleep? All details of procedure if anything remembered. Feelings of safety, content with comfort level, any feelings of fear, CRNAs ability to put patient at ease.

5. Can you describe in detail, the first feelings you had upon realizing the surgery was completed and you were in the Recovery Area? Possible Prompts and Follow-ups: Can you describe your physical feelings at this time? Feelings of comfort, discomfort, details. Who were all the people involved in your care at this time? What do you remember about all the activities these various people performed for you during this recovery period? How did you feel psychologically? Did your anesthetic appear to have worn off too soon, too slowly, just right? If you had to change anything different during this time period, what would it be? Why?
6. Can you describe the process as you remember it, when you were discharged from the recovery area and sent home? How did you feel about being sent home and the time that you were? Possible Prompts and Follow-ups: Readiness to go home, reasons for prolonged stay in the recovery area, any feelings of complications, satisfaction of the entire anesthetic process, feelings regarding the anesthesia provider, comfort level at time of discharge, i.e. pain, nausea, how it was treated, feelings during transport/drive home, both physical and psychological, opinions about quality of care received, any follow up care needed requiring CRNA interaction with patient, organization of discharge process, feelings of convenience, privacy, satisfaction.
7. Looking back on the entire anesthetic process, can you describe for me your opinion of the process, from your first learning what type of anesthetic you were to receive and by whom, until the time you were at home and felt your own self again. Possible Prompts and Follow-ups: Would you recommend this type of anesthesia to a friend? Why? How would you describe the

person who administered your anesthetic? How would you describe your level of satisfaction with your anesthetic care? What feelings did you have regarding safety, of your anesthetic care? What would you change about your anesthesia care if you could? Would you have surgery with this type of anesthetic in an office setting again? What did you think of the entire process of having surgery in this setting vs. a hospital setting?

8. If you could describe all those aspects of the care you received by the CRNA that led to feelings of a positive outcome by you, what would they be? All those aspects of care that led to feelings of negative outcomes?

APPENDIX D

Wayne State University Human Investigation Committee, Notice of Expedited Approval.

WAYNE STATE UNIVERSITY

HUMAN INVESTIGATION COMMITTEE
4201 St. Antoine Blvd. , UHC 6-G
Detroit, Michigan 48201
Phone: (313) 577-1628
Fax: (313) 993-7122
HIC Website: www.orsps.wayne.edu

NOTICE OF EXPEDITED APPROVAL

TO: **Mary A. Golinski**
(Anesthesia)
2V.11, DRH

FROM: Peter A. Lichtenberg, Ph.D. Peter A. Lichtenberg
Chairman, Behavioral Institutional Review Board (B03)

DATE: May 21, 2001

RE: Protocol # 05-67-01(B03)-ER "Anesthesia in the Office-based Setting from the Patient's Perspective" No funding requested at this time.

The above-referenced Protocol and Consent Form were **APPROVED** following Expedited Review (**Category 7***) by the Chairman for the Wayne State University Institutional Review Board (B03) for the period of **May 21, 2001 through May 20, 2002.**

EXPIRATION DATE: May 20, 2002

This approval does not replace any departmental or other approvals that may be required.

Federal regulations require that all research be reviewed at least annually. **It is the Principal Investigator's responsibility to obtain review and conti[illegible]roval before the expiration date**. You may **not** continue any research activity beyond the expiration d[illegible] HIC approval.

- If you wish to have your protocol a[illegible]d for continuation after the above approval period, please submit a completed Continuation Form at least six weeks before the expiration date. It may take up to six weeks from the time of submission to the time of approval to process your continuation request.
  Failure to receive approval for continuation before the expiration date will result in the automatic suspension of the approval of this protocol on the expiration date. Information collected following suspension is unapproved research and can never be reported or published as research data.
- If you do not wish continued approval, please submit a completed Closure Form when the study is terminated.

All changes or amendments to your protocol or consent form require review and approval by the Human Investigation Committee (HIC) **BEFORE** implementation.

You are also required to submit a written description of any adverse reactions or unexpected events on the appropriate form (Adverse Reaction and Unexpected Event Form) within the specified time frame (see HIC policy).

- **Based on the Expedited Review List , revised November, 1998**
- **C: Prof. Shlomo S. Sawlowsky, 351 EDU**

APPENDIX E

Interview Index

Tab number	Patient number	Office number	Service
1	1	1	Plastic
2	2	1	Plastic
3	3	1	Plastic
4	4	1	Plastic
5	5	1	Plastic
6	6	1	Plastic
7	7	2	Plastic
8	8	2	Plastic
9	9	2	Plastic
10	10	2	Plastic
11	14	4	Dental
1A	11	3	Urology
1B	12	3	Urology
2A	13	3	Urology
3A	15	3	Urology
4A	16	3	Urology
5A	17	3	Urology
6A	18	5	Dental
7A	19	5	Dental

APPENDIX F

American Association of Nurse Anesthetists Standards of Care for Office-Based Anesthesia

Introduction

Certified Registered Nurse Anesthetists (CRNAs) have long been the predominant anesthesia practitioners and leaders in providing anesthesia services in physicians' offices. As the professional organization representing nurse anesthetists, the American Association of Nurse Anesthetists (AANA) advocates high quality, appropriate standards of care for all patients in all settings, including the office based practice setting. As in other settings, CRNAs provide anesthesia working with physicians such as anesthesiologists, surgeons and, where authorized, podiatrists, dentists and other healthcare professionals.

The AANA has been at the forefront in establishing clinical practice standards, including patient monitoring standards. The standards of care in the office based setting are congruent with the *AANA Scope and Standards of Nurse Anesthesia Practice* and are intended to:

1. Provide assistance to CRNAs and other practitioners by promoting a common base for the delivery of quality patient care in the office based setting.
2. Assist the public in understanding what to expect from the practitioner.
3. Support the basic rights of patients.

Although the standards are intended to promote high quality patient care, they cannot assure specific outcomes.

Anesthesia in the Office Setting

There are some unique and specific responsibilities that should be considered prior to administration of anesthesia in the office setting. When considering an office based practice, anesthesia practitioners should determine if there are appropriate resources to manage the various levels of anesthesia for the planned surgical procedures and the condition of the patient. Most office based practice settings are not regulated, therefore, the CRNA should consider the benefit of uniform professional standards regarding practitioner qualifications, training, equipment, facilities and policies that ensures the safety of the patient during operative and anesthesia procedures in the office setting.

At a minimum, the CRNA shall determine that there are policies to address:

a. patient selection criteria
b. monitoring equipment with a back-up electrical source
c. adequate numbers of well trained personnel to support the planned surgery and anesthesia
d. the treatment of foreseeable complications
e. patient transfer to other healthcare facilities
f. infection control practices, including Occupational Safety and Health Administration (OSHA) requirements
g. minimal pre-operative testing, including required consultations
h. ancillary services (e.g. laboratory, pharmacy, consultation with outside specialists)
i. equipment maintenance
j. response to fire and other catastrophic events
k. recovery and discharge of patients
l. procedures for follow-up care

The CRNA shall comply with all applicable state and federal rules and regulations relating to licensure, certification, and accreditation of an office practice

SECTION I

Standard 1

Perform a thorough and complete preanesthesia assessment.

Interpretation: The responsibility for the care of the patient begins with the preanesthetic assessment. Except in emergency situations, the CRNA has an obligation to complete a thorough evaluation and determine that relevant tests have been obtained and reviewed.

Application to Office Practice:
Preanesthesia assessment of the patient undergoing office based surgery should include documentation of at least:

a. assigned physical status
b. airway assessment
c. previous anesthetic history
d. allergies
e. fasting status
f. history and physical

Standard 2

Obtain informed consent for the planned anesthetic intervention from the patient or legal guardian.

Interpretation:
The CRNA shall obtain or verify that an informed consent has been obtained by a qualified provider. Discuss anesthetic options and risks with the patient and/or legal guardian in language the patient and/or legal guardian can understand. Document in the patient's medical record that informed consent was obtained.

Application to Office Practice:
The CRNA shall confirm that consent has been given for the planned surgical or diagnostic procedure and that the patient understands and accepts the plans and inherent risks for anesthesia in the office setting.

Standard 3

Formulate a patient-specific plan for anesthesia care.

Interpretation:
The plan of care developed by the CRNA is based upon comprehensive patient assessment, problem analysis, anticipated surgical or therapeutic procedure, patient and surgeon preferences, and current anesthesia principles.

Application to Office Practice:
A patient specific plan of care is based on patient assessment and the anticipation of potential problems in the unique setting. The operating practitioner concurs that the patient is cleared for the planned anesthetic.

Standard 4

Implement and adjust the anesthesia care plan based on the patient's physiological response.

Interpretation:
The CRNA shall induce and maintain anesthesia at required levels. The CRNA shall continuously assess the patient's response to the anesthetic and/or surgical intervention and intervene as required to maintain the patient in a satisfactory physiologic condition.

Application to Office Practice:
The CRNA shall continuously assess and monitor the patient 's response to the anesthetic. Prior to administration of anesthesia the CRNA shall verify a means to deliver positive pressure ventilation and to treat emergency situations including the availability of necessary emergency equipment and drugs. If "triggering agents" associated with malignant hyperthermia are used, adequate dosages of Dantrium should be immediately accessible. (see Appendix-AANA Position Statement 2.5-Preparedness for Treatment of Malignant Hyperthermia.)

Standard 5

Monitor the patient's physiologic condition as appropriate for the type of anesthesia and specific patient needs.

A. *Monitor ventilation continuously.* Verify intubation of the trachea by auscultation, chest excursion, and confirmation of carbon dioxide in the expired gas. Continuously monitor end-tidal carbon dioxide during controlled or assisted ventilation. Use spirometry and ventilatory pressure monitors.
B. *Monitor oxygenation continuously* by clinical observation, pulse oximetry, and if indicated, arterial blood gas analysis.
C. *Monitor cardiovascular status continuously* via electrocardiogram and heart sounds. Record blood pressure and heart rate at least every five minutes.
D. *Monitor body temperature continuously* on all pediatric patients receiving general anesthesia and when indicated, on all other patients.
E. *Monitor neuromuscular function and status* when neuromuscular blocking agents are administered.
F. *Monitor and assess patient positioning* and protective measures at frequent intervals.

Interpretation:
Continuous clinical observation and vigilance are the basis of safe anesthesia care. The standard applies to all patients receiving anesthesia care and may be exceeded at any time at the discretion of the CRNA. Unless otherwise stipulated in the standards a means to monitor and evaluate the patient's status shall be immediately available for all patients. As new patient safety technologies evolve, integration into the current anesthesia practice shall be considered. The omission of any monitoring standards shall be documented and the reason stated on the patient's anesthesia record. The CRNA shall be in constant attendance of the patient until the responsibility for care has been accepted by another qualified health care provider.

Application to Office Practice:
Minimum monitors in the office based setting include: pulse oximetry, ecg, and blood pressure, an O_2 analyzer and end-tidal CO_2 analyzer when administering general anesthesia, body temperature for the pediatric patient, an esophageal or precordial stethoscope and peripheral nerve stimulator as indicated.

Standard 6

There shall be complete, accurate, and timely documentation of pertinent information on the patient's medical record.

Interpretation:
Document all anesthetic interventions and patient responses. Accurate documentation facilitates comprehensive patient care, provides information for retrospective review and research data, and establishes a medical-legal record.

Application to Office Practice:
The CRNA confirms there is a plan for accurate record keeping and documentation of the following:

a. informed consent
b. preanesthesia and postanesthesia evaluations
c. course of the anesthesia, including monitoring modalities and drug administration, dosages and wastage
d. discharge follow-up

The CRNA shall confirm that there is a systematic mechanism for documentation of compliance with U. S. Drug Enforcement Agency rules, Board of Pharmacy regulations, Food and Drug Administration requirements and U. S. Department of Transportation regulations for accountability and appropriate storage.

Documentation of provider licensure and credentials, facility licensure and continued competence is recommended.

Standard 7

Transfer the responsibility for care of the patient to other qualified providers in a manner which assures continuity of care and patient safety.

Interpretation:
The CRNA shall assess the patient's status and determine when it is safe to transfer the responsibility of care to other qualified providers. The CRNA shall accurately report the patient's condition and all essential information to the provider assuming responsibility for the patient.

Application to Office Practice:
Postanesthesia care is consistent with other practice settings in that there is a designated area staffed with appropriately trained personnel. At least one qualified provider: a surgeon, anesthesia practitioner or a registered nurse who is certified in advanced cardiac life support remains in the facility until all patients are discharged. An accurate post anesthesia record is documented.

Standard 8

Adhere to appropriate safety precautions, as established within the institution, to minimize the risks of fire, explosion, electrical shock and equipment malfunction. Document on the patient's medical record that the anesthesia machine and equipment were checked.

Interpretation:
Prior to use, the CRNA shall inspect the anesthesia machine and monitors according to established guidelines. The CRNA shall check the readiness, availability, cleanliness, and working condition of all equipment to be utilized in the administration of the anesthesia care. When the patient is ventilated by an automatic mechanical ventilator, monitor the integrity of the breathing system with a device capable of detecting a disconnection by emitting an audible alarm. Monitor oxygen concentration continuously with an oxygen supply failure alarm system.

Application to Office Practice:
The CRNA confirms equipment is routinely maintained by appropriately trained professionals. Prior to use, equipment is inspected for risk of malfunction and electrical/fire hazards.

Standard 9

Precautions shall be taken to minimize the risk of infection to the patient, the CRNA, and other healthcare providers.

Interpretation:
Written policies and procedures in infection control shall be developed for personnel and equipment.

Application to Office Practice:
The CRNA shall confirm that policies are in place and a process exists to document compliance with Occupational Safety and Healthcare Administration (OSHA) standards relating to blood borne pathogens, medical waste and hazardous materials, including personal protection devices, disposal of needles and syringes and contaminated supplies.

Standard 10

Anesthesia care shall be assessed to assure its quality and contribution to positive patient outcomes.

Interpretation:
The CRNA shall participate in the ongoing review and evaluation of the quality and appropriateness of anesthesia care. Evaluation shall be performed based upon appropriate outcome criteria and reviewed on an ongoing basis. The CRNA shall participate in a continual process of self-evaluation and strive to incorporate new techniques and knowledge into practice.

Application to Office Practice:
The CRNA shall participate in assessment and review of appropriateness of anesthesia care provided in the office setting. There should be a process to document patient satisfaction and outcomes.

Standard 11

The CRNA shall respect and maintain the basic rights of patients.

Interpretation:
The CRNA shall support and preserve the rights of patients to personal dignity and ethical norms of practice.

Application to Office Practices:
The CRNA shall act as the patient advocate. The patient has the right to dignity, respect and consideration of legitimate concerns in the office setting. Patients should be involved with all aspects of their care.

SECTION II
Supplemental Resources

Minimum Elements for Providing Anesthesia Services in the Office Based Practice Setting
Assessment Checklist

PRACTITIONERS

CRNA

- ☐ Will the Board of Nursing and state laws allow the CRNA to work with this physician type?
- ☐ Will your liability insurance cover office anesthesia?
- ☐ Does the state have rules/regulations specific to the office based anesthesia?
- ☐ What classes of patients, types of surgical procedures and anesthesia will be performed?

Operating Physician

- ☐ Does the physician have liability coverage, current licensure/DEA number?
- ☐ Does the physician have hospital privileges for procedures?
- ☐ Does the physician have admitting privileges at the nearest hospital?

FACILITY

- ☐ Is the facility licensed?
  - ☐ By whom? Indicate name:_____
- ☐ Is the facility accredited?
  - ☐ By whom? Indicate name:_____
- ☐ OR size, recovery room, pre-op area adequate for anesthesia and surgical procedures?
- ☐ Is there a transfer agreement?
- ☐ Does the facility have an emergency service agreement?
- ☐ Telephone numbers accessible and posted? (EMS, MH hotline, Hospital, etc.)

EQUIPMENT

Local, IV Sedation, Regional and General Anesthesia

- ☐ Monitors include: pulse oximeter, electrocardiogram, blood pressure monitor.
- ☐ Oxygen supplies. A minimum of two oxygen sources must be available with regulators attached.
- ☐ Positive pressure ventilation sources including an ambu bag and a mouth-to-mask unit.
- ☐ Defibrillator (charged).
- ☐ Suction machine, tubing, suction catheters and yankaur suctions.
- ☐ Anesthesia cart to provide for organization of supplies including endotracheal equipment, masks, airways, syringes, needles, intravenous catheters, intravenous fluids and tubing, alcohol, stethoscopes, and appropriate medications.
- ☐ Emergency medication to include at a minimum, atropine, epinephrine, ephedrine, lidocaine, diphenhydramine, cortisone, and a bronchial dilator inhaler.

For General Anesthesia

- ☐ An authorized factory technician or qualified service personnel has checked out anesthesia machine(s). The following items are available as an integral part of the anesthesia machine:
  - ☐ O2 Fail-safe system
  - ☐ Waste gas exhaust system
  - ☐ Vaporizers-calibration & exclusion system
  - ☐ Pulse oximeter, electrocardiogram, blood pressure monitors
  - ☐ Oxygen analyzer
  - ☐ End-tidal CO_2 Analyzer
  - ☐ Alarm system

Emergencies

- ☐ Emergency equipment
  - ☐ Basic Airway Equipment (adult and pediatric)
    - ☐ Nasal & oral airway
    - ☐ Face Mask (appropriate for patient)
    - ☐ Laryngoscopes, ET tubes (adult and pediatric)
    - ☐ Ambu Bag
  - ☐ Difficult Airway Equipment (LMA, Light wand, Cricothyrotomy Kit)
  - ☐ Defibrillator
  - ☐ Supplemental O_2
  - ☐ Emergency drugs
  - ☐ Compression board
  - ☐ Suction equipment (suction catheter, yankauer type)
  - ☐ Drugs & equipment to treat M.H. on site
- ☐ Back-up power

Pharmaceutical Accountability

☐ Is there an appropriate mechanism for documenting and tracking use of pharmaceuticals including controlled substances?

- ☐ Lock box
- ☐ Count sheets
- ☐ Expiration checklist or policy
- ☐ DEA 222 forms
- ☐ Waste policy

Policies/Procedures and protocols

Are there policies/protocols regarding:

- ☐ Pre-Op lab requirements
- ☐ NPO status
- ☐ Case cancellations
- ☐ M.H. protocols
- ☐ Pediatric drug dosages
- ☐ Emergency
  - ☐ Cardio-pulmonary
  - ☐ Fire
  - ☐ Bomb threat
- ☐ Patient selection
- ☐ Discharge criteria
- ☐ ACLS algorithms
- ☐ Latex allergy protocols
- ☐ Chemical spill
- ☐ Building evacuation
- ☐ Reporting adverse reactions
- ☐ Infection control in adherence to OSHA rules for control of medical waste, disposal of sharps and personal protection

Record Keeping

☐ Is there a system for record keeping for patients and providers?

- ☐ Anesthesia record
- ☐ Credentials
- ☐ Patient satisfaction/follow-up
- ☐ Purchasing agreements
- ☐ Consent forms
- ☐ Q/A mechanism
- ☐ Preanesthesia equipment & supplies

PERSONNEL

OR	☐ RN	☐ LPN	☐ OR Tech
PACU	☐ RN	☐ LPN	☐ Anesthetist/Surgeon
ACLS Certified	☐ Surgeon	☐ Anesthetist	☐ RN
BCLS Certified	☐ RN	☐ LPNs	☐ Others

RESOURCES:

(1) Professional Practice Manual for the Certified Registered Nurse Anesthetist. Park Ridge, Ill: American Association of Nurse Anesthetists; 1998.

(2) Standards and Checklist for Accreditation of Ambulatory Surgery Facilities. Mundelein, Ill: American Association for Accreditation of Ambulatory Surgery Facilities, Inc. Accreditation Office;1997.

(3) Accreditation Handbook for Ambulatory Health Care. Skokie, Ill: Accreditation Association for Ambulatory Health Care, Inc.:1998.

(4) Center for Healthcare Environmental Management. Special Report: Physician Office Safety Guide. Plymouth Meeting, Pa: ECRI:1998.

(5) A Crosswalk Between the American College of Surgeonsí Guidelines for Optimal Office-based Surgery and the Joint Commissionsí Ambulatory Care Standards. Oakbrook Terrace, Ill: Joint Commission on Accreditation of Healthcare Organizations:1998.

(6) Guidelines for Optimal Office-based Surgery. 2nd ed. Chicago, Ill: American College of Surgeons;1996.

(7) Carroll R, ed. American Society for Healthcare Risk Management. Risk Management Handbook. Chicago, Ill: AHA Publishing, Inc:1997.

(8) Patient Assessment. Parameters of Care for Oral and Maxillofacial Surgery. Rosemont, Ill: American Association of Oral and Maxillofacial Surgeons. 1995:53(9):1-29.

(9) The Use of Conscious Sedation, Regional Anesthesia and General Anesthesia in Dentistry. Chicago, Ill: American Dental Association: 1998.

(10) Malignant Hyperthermia Association of the United States. Available at: http://www.mhaus.org. Accessed March 11, 1999.

Anesthesia Equipment and Supplies Checklist
(To be kept in log book)

Date:_____ Checked-out by:_____ Location:_____

A. ☐ Oxygen pipeline pressure or primary source _____PSI
☐ Oxygen tank pressure (2nd source) _____PSI
B. ☐ Back-up power
C. ☐ Defibrillator and Crash Cart available.
D. ☐ Anesthesia cart supplies checked, i.e., IV equipment, anesthetics, stethoscope
E. ☐ Suction equipment tested
F. ☐ Ambu bag tested
G. ☐ EKG operational
H. ☐ Pulse oximeter operational
I. ☐ Blood Pressure monitor
☐ Back-up BP cuff
J. ☐ Atropine
☐ Epinephrine
☐ Ephedrine
☐ Lidocaine
☐ Other Emergency medications as indicated
K. ☐ Endotracheal equipment, airways

If General Anesthesia is Planned: Anesthesia Machine No._____

L. ☐ Leak test performed and other tests as indicated
M. ☐ Oxygen analyzer ON
N. ☐ Capnometer connected
O. ☐ Temperature monitor available
P. ☐ Emergency airways available, i.e., LMA, Combitube, or Cricothyrotomy kit
Q. ☐ Succinylcholine
☐ Dantrolene
☐ Other anesthesia medications as indicated

Note (if problem):_____

_____

_____

_____

Follow-up (who, what): _____

_____

_____

POSITION STATEMENT

American Association of Nurse Anesthetists
222 South Prospect Ave. • Park Ridge, Illinois 60068 • 847/692-7050

No. 2.5
Title: Preparedness for Treatment of Malignant Hyperthermia

Position: The American Association of Nurse Anesthetists (AANA) recommends that every anesthetizing location have a well-defined written protocol for the diagnosis and treatment of malignant hyperthermia.

The AANA recognizes the Malignant Hyperthermia Association of the United States (MHAUS) as experts in establishing protocol for the diagnosis and treatment of malignant hyperthermia and advocates that all anesthesia providers and healthcare facilities adhere to the MHAUS published recommendations.

The AANA believes that the following recommendations of MHAUS are essential practices which should be implemented by anesthesia providers and healthcare facilities:

1. All anesthesia departments and anesthesia providers should be prepared to treat a malignant hyperthermia episode. (A preoperative and intraoperative treatment protocol is available from MHAUS.)
2. All operating and recovery room personnel should be trained in the recognition and treatment of malignant hyperthermia. (Inservice materials can be provided by MHAUS.)
3. A designated cart containing dantrolene (36 vials) and the ancillary medications and equipment as recommended by MHAUS be immediately available in the anesthetizing and recovery areas. (A listing of recommended supplies is available from MHAUS.)
4. A written treatment plan should be posted with the cart in appropriate area. (A poster is available from MHAUS.)
5. The 24-hour emergency hotline number of the MHAUS/Medical Alert Foundation should be posted on the cart and appropriate areas.

Purpose: To improve patient safety in anesthesia by increasing the awareness of the anesthesia provider of the necessity for thorough preparation to successfully manage a suspected or unsuspected occurrence of malignant hyperthermia.

Background: Malignant hyperthermia is a well-recognized syndrome which can occur in the presence of anesthesia. The morbidity of this syndrome can be quite high if it is not recognized and treated appropriately.

The American Association of Nurse Anesthetists believes that thorough preoperative screening and prevention is the first step in protecting the public. Despite the increased awareness among healthcare professionals and screening for personal and familial history of the disease, malignant hyperthermia still occurs. Because of the seriousness of this syndrome and the continued rate of occurrence, the AANA believes that measures should be taken for early detection and treatment of the disease process. With the trend toward more surgical procedures and anesthetics being performed in nontraditional settings, it is imperative that anesthesia practitioners be prepared to handle a malignant hyperthermia crisis in any and all anesthetizing locations.

NOTE: MHAUS publications referenced in this position statement can be obtained upon request from MHAUS at P.O. Box 1069, Sherburne, NY 13460-1069, (607) 674-7901. The MHAUS hotline telephone number is 1 800 MH HYPER (1-800-644-9737).

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Revised April 1991
Reaffirmed by AANA Board of Directors June 1997

Bibliography:

1. Allen GC, Rosenberg H, Fletcher JE. Anesthetic outcome in patients previously tested negative for malignant hyperthermia susceptibility. Anesthesiology 1990;72:619-622.
2. Ashby D. Malignant hyperthermia: A potential crisis in the postanesthesia care unit. J Post Anesth Nurs 1990;5:279-281.
3. Brownell AKW, Pasuke TB. Use of local anesthetics in malignant hyperthermia. Can Med Assoc J. 1986;134:993-994.
4. DeYoung R. Malignant hyperthermia. In: Allan A, ed. Post Anesthesia Nursing Review for Certification. Richmond, Virginia: American Society for Post Anesthesia Nurses. 1986:61-63.
5. Drain C, Christoph SS. Malignant hyperthermia. In: The Recovery Room. Philadelphia: W. B. Saunders Company. 1987:516-521.
6. Gronert GA, Schulman SR, Mott J. Malignant Hyperthermia. In: Miller RD, ed. Anesthesia. 3rd ed. New York: Churchill Livingstone. 1990:935-956.
7. Haag G. Are you prepared for a malignant hyperthermia crisis? AANA J. 1990;58:250-251.
8. Jordan LM. Malignant hyperthermia. Todays OR Nurse 1987;9:12-18.
9. Larach MG, Rosenberg H, Larach DR, et al. Prediction of malignant hyperthermia susceptibility by clinical signs. Anesthesiology. 1987;66:546-550.
10. Lopez J, Pablo M, Alamo L. Dantrolene sodium is able to reduce the resting ionic Ca2+ in muscle from humans with malignant hyperthermia. Muscle Nerve. 1987;10:77-79.
11. Malignant Hyperthermia: The Role of the CRNA. Westport, Connecticut: Malignant Hyperthermia Association of the United States. 1990.
12. Malignant Hyperthermia: An Anesthesia Protocol. Westport, Connecticut: Malignant Hyperthermia Association of the United States. 1990.

REFERENCES

American Association of Nurse Anesthetists. (1999). Standards for Office-Based Anesthesia Practice. Park Ridge, Ill.

American Society of Anesthesiologists. (2000) Statement on Qualifications of Anesthesia Providers in the Office-Based Setting (Approved by House of Delegates on October 13, 1999). [On-line], Available: http://www.asahq.org/Standards/29.htm.

Ashley, S.M. & Strasser, S. (1997). The patient as a valuable source of outcomes and quality. Nutrition, 13, 701-702.

Baggs, J.G. & Schmitt, M.H. (1997). Nurses' and Resident Physicians' Perceptions of the Process of Collaboration in an MICU. Research in Nursing and Health, 20, 71-80.

Biddle, C. (1994). AANA Journal Course: Update for nurse anesthetists—Outcomes measures in anesthesiology: Are we going in the right direction? AANA Journal, 62, 117-124.

Burns, N. & Grove, S.K. (1997). The Practice of Nursing Research, Conduct, Critique, & Utilization, 3rd Ed. W.B. Saunders Company.

Cheney, F.W., Posner, K., Caplan, R.A., & Ward, R.J. (1989). Standards of care and anesthesia liability. JAMA, 261, 1599-1603.

Cohen, M.M. & Duncan, P.G. (1988). Physical status scores and trends in anaesthetic complications. Journal of Clinical Epidemiology, 41, 83-90.

Egger, E. (2000). Now, more than ever, physicians, staff need to focus on treating patients as customers. Health Care Strategy Management, 18, 12-13.

Faust, H.B. (1998). Outcomes research in your office. Journal of the American Academy of Dermatology, 38, 987-989.

Friedberg, B. (Winter, 1998). Society for Office-Based Anesthesia Newsletter, 3. [On-line], Available: www.soba.org.

Henderson, S. (1997). Knowing the patient and the impact on patient participation: A grounded theory study. International Journal of Nursing Practice, 3, 111-118.

Hoefflin, S.M., Bornstein, J.B., & Gordon, M. (2001). General anesthesia in an office-based plastic surgical facility: A report on more than 23,000 consecutive office-based procedures under general anesthesia with no significant anesthetic complications. Plastic and Reconstructive Surgery, 107, 243-51.

Irurita, V.F. (1999). Factors affecting the quality of nursing care: The patient's perspective. International Journal of Nursing Practice, 2, 86-94.

Jordan, L.M. & Foster, S.D. (Editors). (1994). Professional Aspects of Nurse Anesthesia Practice, American Association of Nurse Anesthetists. Philadelphia: F.A. Davis Company.

Jordan, L.M. (1999, August). Safe anesthesia in the office setting. Presentation at the AANA Annual Meeting, Boston, MA.

Jordan, L.M., Kremer, M., Crawforth, K., & Schott, S. (2001). Data driven practice improvement: The AANA Foundation closed claims study. AANA Journal, 69, 301-311.

Kellie, S.E. (1991). Assessing non-clinical outcomes. Quality Assurance Review, 3, 4-5.

Kost, M. (1998). Manual of conscious sedation. Philadelphia: W.B. Saunders.

Laurito, C.E. (1998). Report of the Educational Meeting, The Society for Office-Based Anesthesia, Orlando Florida, March 7, 1998. Journal of Clinical Anesthesia, 10, 445-448.

LeCompte, M.D. & Schensul, J.J. (1999). Designing and conducting ethnographic research, Vol. 1, Ethnographer's Toolkit. Walnut Creek: Altamira Press.

Lee, A. & Lum, M.E. (1996). Measuring anaesthetic outcomes. Anaesthesia and Intensive Care, 24, 685-693.

Levin, J.S., Glass, T.A., Kushi, L., Schuck, J., Steele, L., & Jones, W. (1995). Quantitative methods in research on complementary and alternative medicine: A methodological manifesto. Medical Care, 35, 1079-1094.

Lincoln, Y.S. & Guba, E.G. (1985). Naturalistic inquiry. Newbury Park: SAGE Publications.

Marcario, A., Weinger, M., Carney, S., and Kim, A. (1999). Which clinical anesthesia outcomes are important to avoid? The perspective of patients. Anesthesia and Analgesia, 89, 652-658.

Marcario, A., Weinger, M., Truong, P., & Lee, M. (1999). Which clinical anesthesia outcomes are both common and important to avoid? The perspective of a panel of expert anesthesiologists. Anesthesia and Analgesia, 88, 1085-1091.

Michigan Public Health Code, (2000). [On-line], Available: http://www. michigan.gov.

Michigan Register, (2000). [On-line], Available: http://www.michigan.gov.

Moller, J.T., Pederson, T., Fasmussen, L.S. et al. (1993). Randomized evaluation of pulse oximetry in 20,802 patients: I and II. Anesthesiology, 78, 436-453.

Morse, J.M. & Field, P.A. (1995). Qualitative research methods for health professionals (2nd ed.). California: SAGE Publications.

Preble, L.M., Perlstein, L., Katsoff-Seidman, L., O'Connor, T.Z., & Barash, P.G. (1993). The patient care evaluation system: Patient's perception of anesthetic care. Connecticut Medicine, 57, 363-366.

Rosenstein, A.H. (1997). Outcomes management: Opportunities and objectives. Health Care Innovations, 7, 12-15.

Senate Committee on Investigations, Taxation, and Government Operations. The Senate, State of New York. Albany 12247. (1999-February) Problems of Office Surgery.

Spradley, J.P. (1980). Participant observation. Fort Worth: Harcourt College Publishers.

Tang, J., Chen, L., White, P.F., Wender, R.H., Naruse, R., Kareiger, R., & Sloninsky, A. (1999). Use of propofol for office-based anesthesia: Effect of nitrous oxide on recovery profile. Journal of Clinical Anesthesia, 11, 226-230.

Tang, J., White, P.F., Wender, R.H., Naruse, R., Kariger, R., Sloninsky, A. et al. (2001). Fast-track office-based anesthesia: A comparison of propofol versus

desflurane with antiemetic prophylaxis in spontaneously breathing patients. Anesthesia and Analgesia, 92, 95-99.

Tarlov, A.R., Ware, J.E., Greenfield, S., Nelson, E.C., Perrin, E., & Zubkoff, M. (1989). The medical outcomes study. JAMA, 262, 925930.

Taylor, S.J. & Bogdan, R. (1998). Introduction to qualitative research methods (3rd ed.). New York: John Wiley and Son, Inc.

Tobin, M. (2000). Office-based anesthesia documents. Unpublished manuscript.

Tobin, M., Conover, J.L., & Anderson, B.L. (2002). AANA NewsBulletin, 56, 8-9.

Tunajek, S. (1999). Office-based anesthesia standards. AANA Journal, 67, 115-120.

Walker, J., Brooksby, A., McInerny, J., & Taylor, A. (1998). Patient perceptions of hospital care: Building confidence and trust. Journal of Nursing Management, 6, 193-200.

Warner, K.C. (1997). Change in health care: Satisfaction guaranteed. Today's Surgical Nurse, 19, 47-49.

Wilde, B., Starrin, B., Larsson, G., & Larsson, M. (1993). Quality of care from a patient perspective—a grounded theory study. Scandinavia Journal of Caring Science, 7, 113-120.

ABSTRACT

ANESTHESIA DELIVERY IN OFFICE-BASED SURGERY: QUALITY – OF – CARE AND PATIENT SATISFACTION OUTCOMES

by

MARY A. GOLINSKI

May 2002

Advisor: Dr. Karen Tonso

Major: Educational Evaluation and Research

Degree: Doctor of Philosophy

The offices of two plastic surgeons, one urologist, and two dentists in southeast Michigan, where surgery is performed in office operating rooms and anesthesia is delivered by Certified Registered Nurse Anesthetists, participated in an ethnographic study. Field research was conducted to determine what goes on in these settings specific to anesthesia care, and what the various roles of the nurse anesthetists are. Additionally, 19 patients were interviewed post-operatively from the respective sites. The conceptual framework from the Medical Outcomes Study (Tarlov et al, 1989) guided the research. The findings revealed that effective communication between surgeon and the nurse anesthetist is integral to promote patient safety, quality outcomes, and patient satisfaction. The roles of the nurse anesthetist are expanded and the patients were overwhelmingly satisfied with care. Suggestions for further outcomes research specific to office-based surgery with anesthesia delivery are given.

AUTOBIOGRAPHICAL STATEMENT

MARY A. GOLINSKI

Mary A. Golinski obtained her Bachelor of Science degree in Nursing from Wayne State University and her Master of Science degree in Nurse Anesthesiology from the University of Detroit/Mercy. She is past president of the Michigan Association of Nurse Anesthetists as well as a current member of the Association of Operating Room Nurses. She has been an active member in the American Association of Nurse Anesthetists since 1989. She belongs to the American Association of Nurse Anesthetists Closed Claim Research Team and has been active in data collection for this research project since 1995. Ms. Golinski is currently the Executive Director of Surgical Services at the Detroit Medical Center in Detroit, Michigan, as well as Assistant Professor in the College of Pharmacy and Allied Health, Wayne State University. She is in a leading role guiding the nurse anesthesia students in research in the Wayne State University Graduate Program of Nurse Anesthesiology. Her three children are her most proud accomplishments, as well as the marriage to her husband of 22 years.