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An Evaluation of the Quality Assurance Plan at East Tennessee State University's Dental Hygiene Program

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Jennifer Fielden

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Dr. Deborah Dotson, Chair

Dr. Randy Byington

Dr. Ester Verhovsek

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ABSTRACT

An Evaluation of the Quality Assurance Plan at East Tennessee State University's Dental

Hygiene Program

By

Jennifer Fielden

Quality assurance in healthcare is fundamental in ensuring the achievement of desired outcomes for patients. In 2011 a quality assurance plan was created at the East Tennessee State University (ETSU) dental hygiene program in order to meet accreditation standards. The purpose of this study was to evaluate this plan in order to determine its effectiveness in improving the quality of patient care indicators. One hundred fifty patient charts were selected and audited. Deficiencies were counted in the categories of assessment, treatment, documentation, referral, caries management, perio management, patient education, and follow-up. Research findings were varied; however, external variables with the potential to affect the study's results were identified. Furthermore, statistical process control procedures indicated that the quality assurance program was effective or had the potential to be effective. Although further research is warranted, this study could be used to improve quality assurance practices at the ETSU dental hygiene program.

DEDICATION

I dedicate this thesis to my family. Mom, you are the strongest woman I know. If I can become even half of the person you are, I will consider myself fortunate. Thank you for nurturing me and for giving me the courage and the wings to fly. Dad, although it may not always seem like I am listening, I try my hardest to memorize your corny jokes, old-timer sayings, and stories. Thank you for providing for me and for making my opportunities in life possible. Josh, you are the best big brother I could ask for. Thank you for letting me steal all of your CDs and toys when we were kids and for always looking out for me. Jessica, being your twin sister is both frustrating and wonderful. If people must mistake me on a daily basis for someone else, I am glad that someone is you. You make me so proud. A sister is a friend for life.

Katlyn and Blaklie, you cannot know how much being your aunt has positively changed my life. You give me a reason to keep going. I promise to always cherish you, to secretly let you do fun things that Daddy-o doesn't allow, and to help make your dreams come true.

Thank you all for loving me unconditionally. Thank you for seeing my potential and helping me to reach it. Thank you for your patience, your proofreading, and your faith in me. I could not have gotten this far without each of you by my side. I love you with all of my heart. To the moon and to the stars and to the goblins.

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excellent example of both! Thank you for everything you've done for me and for making this experience a great one.

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CHAPTER 1

INTRODUCTION

Although the concept has grown and evolved over many decades, quality assurance is not new to health care. An early example of quality assurance in health care was seen in 1854 when Florence Nightingale attempted to establish a standard for nursing care in Britain. Quality assurance made its way into the United States in 1910 with the Flexnor Report that studied medical education and found that some programs were unable to meet quality standards (Bilawka & Craig, 2003b). In 1917 the American College of Surgeons (ACS) developed standards for hospitals and a year later began doing on-site hospital inspections. Standards of care continued to improve over the next few decades and in 1951 the Joint Commission on Accreditation of Hospitals (JCAH) was created. JCAH's name was changed in 1987 to the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and again in 2007 to simply The Joint Commission. To date, the Joint Commission strives to continuously improve the performance of health care organizations and ensure the provision of safe, high quality care. In 1979 The American Dental Association (ADA) became a corporate member of the Joint Commission (Joint Commission, 2012).

In dentistry, quality and performance measures are developed and analyzed by the Dental Quality Alliance (DQA) created by the American Dental Association. The organization works to hold oral health care professionals accountable in order to improve the quality of care provided. The American Dental Hygienists' Association (ADHA) is one important stakeholder of the DQA. The DQA is made up of several oral health care stakeholders and its mission is to "advance performance measurement as a means to improve oral health, patient care and safety

through a consensus-building process" (American Dental Association, 2012, Mission section, para. 1).

It is important to understand the concept of quality assurance itself and which criteria must be met in order for a system or process to be considered quality assurance. Liebler and McConnell (2012) explained that the basic control process in management consists of the three cyclic phases including establishing standards, measuring performance, and correcting deviations. Traditionally manufacturing and service industries concentrated on quality control that focused on finding and rejecting defective products and offering ideas to modify processes in order to produce fewer defective products. Similarly, health care organizations used a process known as quality assurance that recorded errors as deviations from set standards and then provided solutions to reducing the frequency of these errors. A factor in common is that both of these processes discover errors after they have occurred and are thus considered retrospective processes. Due to their similarities, the terms *quality control* and *quality assurance* are often used interchangeably (Liebler & McConnell, 2012).

Because quality assurance practices vary widely in structure, scholars have approached research on quality assurance in oral health care from several angles. Saporito, Feldman, Stewart, Echoldt, and Buchanan (1994) developed a self-assessment quality assurance program for dentists to assess the strengths and weaknesses of their own practice. The authors found this self-administered instrument to be inexpensive, effective, convenient, nonthreatening, and able to "provide dentists with the necessary tools to assess and ultimately improve their practice" (Saporito et al., 1994, p. 633). Other research further supported the usefulness and effectiveness of self-assessment as a quality assurance technique. Bilawka and Craig (2003a) described a self-

assessment quality management program as nonpunitive, effective, and likely to improve acceptability.

Another method of quality assurance in dentistry and dental hygiene involves state dental boards' professional licensure requirements. These are boards that grant initial professional licensure and continually police the actions of licensed practitioners. Several areas also require dentists and dental hygienists to complete continuing education hours as a condition of maintaining active licensure. Because each area is responsible for its own quality control processes, there exists a possibility for error and inconsistency (Bilawka & Craig, 2003a; Damiano, Shugars, & Freed, 1993). Researchers chose to evaluate this individualized system. Damiano et al. (1993) compared state dental boards and review committees and found several inconsistencies among states' examinations and disciplinary actions. The authors concluded that "a quality assurance system that combines education with some sanctions (when appropriate) is more likely to engender the support of dentists as well as provide the greatest likelihood of improving the quality of dental care for the public" (Damiano et al., 1993, p. 130).

Research showed that one of the most commonly used quality assurance activities in dental hygiene is mandatory continuing education; however, this approach has been described as "traditional, outdated and ineffective" (Bilawka & Craig, 2003a, p. 218). A fault the researchers found with this method of quality assurance is that dental hygienists must present "evidence of *completion* of a continuing educational activity; however he or she is not required to present any evidence of *learning* as a result of the activity nor are they required to demonstrate competence" (Bilawka & Craig, 2003a, p. 220). In Canada quality assurance is also accomplished by requiring hygienists to complete a specified number of practice hours over a period of time in order to remain eligible to practice. Unfortunately flaws exist within this system as well and authors were

concerned that "established minimum practice hour requirements are merely arbitrary numbers determined without evidence to support their utilisation as a quality assurance mechanism" (Bilawka & Craig, 2003a, p. 220).

In conclusion, regardless of the quality assurance practice studied, research findings were generally unified about the need for more education about quality assurance within health professional programs. "Various concepts about quality assurance appear to be dispersed throughout educational programmes without a cohesive course or module targeted to address the need for continuous quality improvement among dental hygienists" (Bilawka & Craig, 2003a, p. 221-222). Including quality management as a component of professional education may raise awareness of the need for quality control; increase the acceptability of such practices; and dispel the idea that quality management is punitive in nature (Bilawka & Craig, 2003b). Furthermore if students are exposed to quality management at the beginning of their education, they may be more likely to incorporate these techniques in everyday practice (Bilawka & Craig, 2003a).

Background of the Problem

Because of accreditation requirements, quality assurance is a component of most professional programs. "The goal of accreditation is to ensure that education provided by institutions of higher education meets acceptable levels of quality" (U.S. Department of Education, n.d., "Role of the accrediting agency," para. 1). According to the Council for Higher Education Accreditation (CHEA, 2010), institutional and program accreditation protects students by ensuring that schools live up the promises made to students. For dental hygiene programs, becoming accredited and maintaining accreditation is an extensive evaluation process conducted by experts and repeated every 7 years.

In addition to institutional accreditation standards, professional programs must also meet specialized, discipline-specific accreditation standards. Dental hygiene programs are accredited by the American Dental Association's (ADA) Commission on Dental Accreditation (CODA). The principal purpose of CODA is to maintain and improve the quality of dental hygiene education. The Commission's standards include six primary categories: institutional effectiveness, educational program, administration, faculty and staff, educational support services, health and safety provisions, and patient care services. A key component of the standard for patient care services requires each program to have a formal, written patient care quality assurance plan (American Dental Association, Commission on Dental Accreditation, 2007).

The significance of the accreditation process to this study is its catalytic effect on the East Tennessee State University (ETSU) Dental Hygiene program's quality assurance plan. During a 2011 accreditation site visit, the ETSU Dental Hygiene program was found to be deficient in the area of quality assurance. In order to correct this deficiency and meet accreditation standards, the program designed a new patient record audit form [Appendix B] that incorporated aspects of appropriateness, necessity, and quality of care. The new quality assurance plan was granted approval from CODA that same year.

Purpose of the Study

The purpose of this study was to evaluate the quality assurance plan at East Tennessee State University's Dental Hygiene program in order to determine its effectiveness in improving the quality of patient care indicators. By evaluating the dental hygiene program's quality assurance plan and by researching various methods of quality assurance, this study may improve quality assurance practices and the quality of patient care at the ETSU dental hygiene program.

Research Question

The following question guides this study:

1. Does the quality assurance program at East Tennessee State University's dental hygiene program improve the quality of patient care indicators through continuous quality improvement techniques?

Significance of the Study

Health care is a field marked by continuous research, growth, and change. Quality assurance is a dynamic facet of health care that must evolve with changing health professions (Bilawka & Craig, 2003a). In order to provide the highest quality patient care, health care providers should attempt to remain up-to-date on the latest research findings relevant to their discipline, including those pertaining to quality assurance methodologies. In 2011 in order to meet accreditation standards East Tennessee State University's Dental Hygiene program redesigned its quality assurance plan. In evaluating the quality assurance program, the researcher will seek to determine its effectiveness and discover any areas needing further improvement. This study may also add to the body of knowledge regarding quality assurance among dental hygiene programs and prove helpful to other programs in their attempts to meet accreditation standards and continually improve the quality of patient care indicators. On a broader scale, future researchers could use the data collected within this study to design a standardized quality assurance program for accredited dental hygiene programs in East Tennessee.

Delimitations and Limitations

Delimitations for this study were identified. Geographically the study was delimited to the dental hygiene program at East Tennessee State University. Furthermore, the data collected was delimited to those patients treated at the clinic during the summer and fall 2013 semesters.

Limitations of this study included students' thoroughness in documentation in patients' charts.

Assumptions

It is assumed that students put forth their best effort in documentation and in all aspects of patient care.

It is assumed that the quality assurance plan at East Tennessee State University's dental hygiene program meets the Commission on Dental Accreditation's (CODA) standards based on CODA's acceptance of the proposed quality assurance program and granting of full accreditation in 2011.

Operational Definitions

Appropriateness: "What you believe to be a positive and correct approach to your work and to be consistent with your knowledge, skill, and professional standards" (Asadoorian & Locker, 2006, p. 966).

*Assessment: "*The systematic collection, analysis and documentation of the oral and general health status and patient needs" (American Dental Hygienists' Association, 2008, p. 6).

Documentation: "The complete and accurate recording of all collected data, treatment planned and provided, recommendations, and other information relevant to patient care and treatment" (American Dental Hygienists' Association, 2008, p. 9).

*Quality assurance: "*A cyclic process, consisting of three steps: measuring, judging, and improving" (Dolmans, Wolfhagen, & Scherpbier, 2003, p. 210).

Quality of patient care: A standard of patient care that meets the following criteria: is nondiscriminatory and empathetic; uses proper infection control procedures at all times; and follows the dental hygiene process of care, including assessment, planning, implementation, and evaluation (East Tennessee State University Dental Hygiene Program, n.d.).

Referral: A formal, usually written, recommendation from a health care provider that a patient visit a specialist for additional treatment "based on the education, training, interest, and experience of the referring dentist and the unique needs of the patient" (American Dental Association, Council on Dental Practice, 2007, p. 2).

CHAPTER 2

REVIEW OF LITERATURE

The purpose of this study was to evaluate the quality assurance plan at East Tennessee State University's dental hygiene program. The objective of this research was to review past and present literature on quality assurance. Research was conducted using East Tennessee State University's online library databases and was limited to full-text, peer-reviewed sources. Keywords used for this search included *dental hygiene* and *quality assurance*. The concept of quality assurance has evolved over many decades of research and practice. Within each professional discipline and setting, various quality assurance activities take place. Through this literature review, the researcher seeks to outline a brief history of quality assurance, discuss various quality assurance activities, investigate strengths and limitations of quality assurance practices, and finally apply research findings to practice concerning the East Tennessee State University Dental Hygiene program's quality assurance plan.

Quality Assurance

According to Draper, Melding, and Brodaty (2005) the word "quality" comes from the Latin "qualitas" which means "of what kind". The authors further defined "quality" in health services as "meeting and exceeding the needs of consumers" and "quality of care" as "the provision of an acceptable standard of service delivery" (p. 269). However, due to the dynamic nature of health research and evidence-based care, the concept of "quality of care" is evolving. With the growing global financial concerns surrounding the health care system and increasing demands on health care providers, quality is an important topic of study (Bilawka & Craig, 2003b).

Quality assurance is a process that continually evaluates, maintains, and raises standards of quality of care (Draper et al., 2005). The focuses of quality assurance are treatment effectiveness, patients' acceptability of treatment, and the accessibility and continuity of care (Bilawka & Craig, 2003b). Quality assurance in healthcare was first seen with Florence Nightingale's attempt to establish a standard for nursing care in Britain. Throughout the 1900s, with the creation of the Joint Commission on Accreditation of Hospitals (JCAH) in 1951 and Donabedian's theories on quality assurance in the 1980s, health care organizations began paying greater attention to the concept of quality assurance (Draper et al., 2005; Joint Commission, 2012).

Quality Assurance in Industry and Healthcare

Quality in industry changed in the 1950s first in Japan and then throughout North America because of the management methods of W. Edwards Deming. These management methods changed the understanding of quality in industry and resulted in reduced production cost along with improved product quality (Bilawka & Craig, 2003b; Walton, 1986). Early quality assurance efforts in healthcare concentrated upon improving patient outcomes. This method is limited in that outcome assessments are difficult and involve many external variables. It is not possible to definitively link patient outcome with the process of care or type of care provided (Bilawka & Craig, 2003b). The lack of patient compliance and the nature of the disease process are other factors that may positively or negatively influence outcomes (Asadoorian & Locker, 2006). Furthermore, it may be years after the health care has been delivered that the outcome is realized (Draper et al., 2005). Outcome assessments are used in education as well, in which the focus of the outcome is the degree to which curriculum goals are met by the students. Once again

this method is limited because information is not provided about the quality of the educational process (Dolmans et al., 2003).

For these reasons many public health and education professionals evaluate quality by measuring the processes or proficiency of services provided rather than the effects of the services (Green & Ottoson, 1999). This approach to quality assurance was introduced by Avedis Donabedian. By suggesting that structure, process, and outcomes all play a significant role in delivering high quality care, Donabedian revolutionized quality assurance practices in the health care industry. "Structure refers to the availability of facilities, equipment and drugs; process refers to the care delivered to patients and outcomes refer to the result of treatment" (Draper et al., 2005, p. 271). Greco and Eisenberg (1993) supported changing the practice of providers in order to impact outcomes; however, they acknowledged the difficulties in doing so, including reluctant physicians. They went on to explain that "many physicians are already dissatisfied with the practice of medicine because of the increasing number of external constraints on their decision making" (p. 1273). Evaluating changes in behavior, practice, or process operates on the premise that improving these aspects will also improve health care outcomes (Chassin & Galvin, 1998).

Methods of Quality Assurance

Quality assurance practices vary widely depending on the geographic location, clinical setting, and type of practitioner. Some activities include: audit, clinical practice guidelines, feedback, utilization management, peer review, questionnaires, quality circles, continuing education, and accreditation. The method of quality assurance chosen is important because this will influence the results (Draper et al., 2005). Regardless of which practice is used, according to the Royal Society of Edinburgh (1993) (as cited in Bilawka & Craig, 2003b), the primary goal of

quality assurance activities is to guarantee that high quality health care is delivered consistently across all members of a professional group.

Clinical Practice Guidelines

Growing in popularity as a quality assurance instrument are clinical practice guidelines. Guidelines have been shown to be most effective when they are carefully developed and designed specific to a clinical setting. Practice guidelines serve as a formal explanation of the level of care expected from each member of a professional group. A limitation to this quality assurance tool is that information about practice standards is usually received by practitioners through media publications or continuing education courses that are both unreliable in producing compliance (Bilawka & Craig, 2003b). Another weakness is that practice standards require individual responsibility, and in order to be effective healthcare professionals must take the initiative to become familiar with and follow the standards. Practice guidelines are a convenient quality assurance tool, but in order to be useful professionals must evaluate the quality of their own practice and make modifications to the care provided if necessary (Bilawka & Craig, 2003a). Draper et al. (2005) explained that in order "to be effective in defining and raising quality of care, clinical practice guidelines should not stay on bookshelves but be implemented. To do so requires adequate personnel, resources, and support" (p. 270).

Feedback

A way to increase the effectiveness of clinical practice guidelines is to provide feedback to healthcare providers regarding their own practice. This method is nonpunitive and may help promote learning. Feedback has been shown to be effective when used in combination with guideline implementation (Lomas et al., 1991).

Utilization Management

Utilization management refers to methods that are efficient, effective, and ensure high quality while maintaining or reducing cost. "Currently hospitals and large health care facilities are required to develop a utilisation management programme in order to gain accreditation status in the United States" (Bilawka & Craig, 2003b, p. 160). A study by Weingarten, Ermann, Bolus, et al. (1990) found that utilisation management can increase physicians' compliance with guidelines. In this study, physicians were contacted by a member of the utilisation management board in order to request a timely discharge of patients. Results indicated that physicians who received this phone call discharged patients more quickly from the coronary care or intermediate units; however, the authors acknowledged that results could be skewed by a fear of retribution from physicians.

Peer Review

Peer review of organizational practices may be carried out by third parties or, as is often the case in healthcare, by professional associations. Peer review is generally viewed as nonthreatening by healthcare professionals but despite this advantage, research has also shown this method to be unreliable, possibly as a result of bias, subjectivity, or a lack of calibration (Bilawka & Craig, 2003b). Norman et al. (1993) suggested that despite its inability to stand alone as a tool for quality assurance, peer review may be effective when used in combination with other quality assurance activities.

Self-Assessment

Self-assessment as an approach to quality assurance has been concluded by researchers to be nonthreatening, inexpensive, convenient, and significantly impactful on the quality of care (Bilawka & Craig, 2003b). According to Saporito et al. (1994) dentists can identify weaknesses

and improve their practice as a result of a self-administered quality program. An 18-month study funded by the American Fund for Dental Health developed and evaluated a quality assessment program and dentists' perception of practice quality. In order to collect data for this study, the researchers asked participating dentists to complete a preassessment questionnaire about willingness to participate, a self-administered quality assessment questionnaire, and a postassessment questionnaire about changes in perception and strengths and weaknesses of the survey. The Components of the Self-Assessment Quality Assurance program (SAQA) include questionnaires, chart audits, and patient satisfaction surveys. A combination approach such as this has been estimated by several researchers to be an effective quality assurance measure. The SAQA program also considers structure, process, and outcome in its evaluation (Saporito et al., 1994).

Research has also shown a cumulative sum chart or 'cusum' to be an effective self-assessment quality assurance method. These charts are used to plot deviations (either less than, greater than, or equal to) from the expected outcome. Cusums are useful because results are represented visually by a graph and performance feedback is immediate. This method does not provide solutions to identified deficiencies, but it does highlight the need for improvement (Dale & Oakland, 1991; Williams, Parry, & Schlup, 1992). A self-assessment tool similar to the cusum is variance analysis, used to ensure product quality. This tool is easy to use and involves graphs as visual displays of quality of care and performance data (Batalden & Stoltz, 1993).

Questionnaires

Surveys or questionnaires are a popular quality control tool used in nursing (Bilawka & Craig, 2003b). A study conducted at the Maastricht Medical School used a questionnaire containing closed and open-ended questions. Information collected was both rich and

standardized. By doing so, both accountability and improvement goals were reached (Dolmans et al., 2003).

Quality Circles

Another type of self-assessment technique is quality circles. According to Dale and Oakland (1991) and Goldberg and Pegels (1984) (as cited in Bilawka & Craig, 2003b), "quality circles typically involve eight to 10 members of a team who are responsible for discovering, trouble-shooting and solving production or delivery deficiencies at a local (not management) level" and furthermore, "the ability of workers to assess their own work situation provides them with the so-called ownership of the problem, which fosters motivation among the workers to improve the quality of production" (p. 162).

Checklists

Checklists are another quality control instrument. A study by Wylie-Rosett, Cypress, and Basch (1992) used a retrospective analysis of patient records to evaluate physician compliance with set standards. Checklists were used to assess 23 patient records from two different health care settings. The same records were reassessed in 5-7 weeks. The results of the study indicated that checklists are a reliable instrument; however, they did not demonstrate strong validity. In 1993 Emslie and Grimshaw conducted a study that attached a checklist of guidelines for referral to the patient's record for the physician to reference. The results of this study showed improved patient care because of physician compliance with guidelines. According to Bilawka and Craig (2003b), "Cohen and coworkers also demonstrated success implementing guidelines using a checklist made available to physicians at the time of care delivery and decision making" (p. 163). Checklists as an instrument for quality assurance have been shown to promote better decision

making by physicians, by but itself, this instrument does not have a significant impact on all areas of quality (Bilawka & Craig, 2003b).

Continuing Education

Continuing education is a commonly used quality assurance practice in healthcare; however, this method is based on an honor system and leaves room for fraud. Also referred to as "continuing competency," this method is based on the theory that healthcare professionals possess current knowledge in their field upon graduation (Damiano et al., 1993). Healthcare professionals are required to complete a certain number of continuing education credits in order to maintain licensure. Continuing education lectures may be offered at local or national professional meetings and generally documentation verifying attendance and participation is provided. This system is considered ineffective because healthcare professionals are not required to demonstrate learning, only completion of continuing education courses (Bilawka & Craig, 2003b, 2003a). A 2006 study by Asadoorian and Locker raised questions regarding the validity and legitimacy of imposing continuing education time requirements on healthcare professionals. Damiano et al. (1993) asserted that adding evaluations and feedback to the process of continuing education could better demonstrate its effectiveness. Furthermore "a quality assurance system that combines education with some sanctions (when appropriate) is more likely to engender the support of dentists as well as provide the greatest likelihood of improving the quality of dental care for the public" (p. 130).

Audit

The purpose of audits is to ensure that services provided and staff behaviors meet the organization's quality standards. Patel (2010) defined clinical audit as "'a quality improvement process that seeks to improve patient care and outcomes through systematic review against

explicit criteria and the implementation of change'" (p. 30). The audit process has been defined as "'clinical quality assurance achieved by comparison of one's own practice with a recognised standard, subsequent identification of any deficits in practice, recognition of the causes of these deficits, and rectification educational strategies'" (Patel, 2010, p. 30). The audit cycle consists of practice review, problem identification, solution development, change implementation, and finally an assessment of outcomes. External assessors such as accrediting agencies are often the reason for an organization to conduct an audit. Audits may be prospective or retrospective and must be meaningful and carefully organized. Furthermore, in order to be successful, changes to practice should be implemented if deficiencies are identified through the audit process (Patel, 2010).

One 1976 study by Brook and Williams (as cited in Bilawka & Craig, 2003b), "used an audit or review format to determine physicians' compliance with statewide guidelines" (p. 160). Guidelines were published and distributed to physicians and then physicians participated in group discussions regarding these guidelines. "The study showed that this type of intervention could improve physician compliance with published guidelines" (Bilawka & Craig, 2003b, p. 160). Another commonly used evaluation instrument in nursing practice is Phaneuf's Nursing Audit. This is a retrospective tool used to assess the process and quality of nursing care through reviewing nursing notes after the patient has been discharged. Monitor and the Quality Patient Care Scale (QUALPaCS) are similar assessment tools used in nursing; however, each involves different methods. Monitor combines observation of care, review of nursing notes, and patient and staff surveys. QUALPaCS involves documentation and staff surveying. All three tools result in qualitative and quantitative data that can be used for comparison and in order to plan and implement solutions to identified areas of weakness. According to Sparrow and Robinson

(1992), this audit tool assisted in "understanding what needed to be written in the nursing notes, the relationship between these notes and practice, especially in nurse to nurse communication, and the irrelevance of repetitious recording" (p. 1480).

Accreditation

Finally, a quality management tool used in healthcare and education is accreditation. Accreditation involves attempts to guarantee that graduates receive an acceptable curriculum and level of training to enter their professional field and to lessen variation in graduates' competence (Damiano et al., 1993). Although accreditation is helpful in initially controlling quality issues, organizations must be committed to continued quality assurance efforts rather than only meeting accreditations standards (Bilawka & Craig, 2003b).

Quality Assurance at ETSU's Dental Hygiene Program

The quality assurance program at East Tennessee State University's dental hygiene program is a result of the American Dental Association (ADA) Commission on Dental Accreditation (CODA) standards. The CODA (2007) standard that dental hygiene programs must follow in designing their quality assurance plan is as follows:

The program must have a formal written patient care quality assurance plan that includes:

a) standards of care that are patient-centered, focused on comprehensive care, and written in a format that facilitates assessment with measurable criteria;

b) an ongoing review of a representative sample of patients and patient records to assess the appropriateness, necessity and quality of the care provided;

c) mechanisms to determine the cause of treatment deficiencies;

d) patient review policies, procedure, outcomes and corrective measures.

Intent: *The program should have a system in place for continuous review of established standards of patient care. This Standard applies to all program sites where clinical education is provided.*

Examples of evidence to demonstrate compliance may include:

a) documentation of an ongoing review of a representative sample of patients and patient records to assess the appropriateness, necessity and quality of care provided

b) quality assurance policy and procedures

c) patient bill of rights

d) documentation of policies on scope of care provided, recalls and referrals

e) description of the quality assurance process for the patient care program

f) samples of outcomes assessment measures that assess patients' perceptions of quality of care, i.e., patient satisfaction surveys and results

g) results of patient records review (p. 38).

In order to meet this standard, ETSU's dental hygiene program uses a combination approach to quality assurance that includes accreditation guidelines, chart audits, and patient satisfaction surveys. The dental hygiene program faculty members understand that quality should be fundamental to the vision, goals, and objectives of the organization (Draper et al., 2005).

Summary

After reviewing the relative literature and research studies, the researcher believes it is important to carefully evaluate and compare the quality assurance plan at the East Tennessee State University dental hygiene program. "Quality assurance is about ensuring that there are mechanisms, procedures, and processes in place to ensure that the desired quality is delivered" (Harvey & Green, as cited in Dolmans et al., 2003). The research revealed several approaches to

quality assurance and the increased effectiveness of a combination approach. A formal

evaluation of the ETSU dental hygiene program quality assurance plan could determine the best

practices to use and ensure that proper measures are being taken to provide the highest quality

care.

CHAPTER 3

DESIGN AND METHODOLOGY

Overview

Quality assurance is a growing concept in healthcare. Since the creation of the Joint

Commission on Accreditation of Hospitals (JCAH) in 1951, the principles and methods of

quality control and quality management have evolved and expanded (Joint Commission, 2012).

The basic control process involves three cyclic phases including establishing standards,

measuring performance, and correcting deviations (Liebler & McConnell, 2012). Several

research methods have been created that involve these three phases. In healthcare, accreditation

standards serve as a primary quality assurance tool. Dental hygiene programs are accredited by

the American Dental Association's (ADA) Commission on Dental Accreditation (CODA).

At East Tennessee State University's (ETSU) dental hygiene program, the accreditation

cycle used by CODA is 7 years. CODA requires a self-study document prepared by the program

director a few weeks prior to the accreditation site visit. During the accreditation process in

2011, CODA's self-study document included a question pertaining to the quality improvement

program that at the time consisted of data collected from simple, random chart audits. The dental

hygiene program was found to be deficient in the area of quality control and thus a new quality

assurance plan was constructed. The proposed new system for quality assurance was approved

by CODA as in compliance with appropriate standards. The researcher sought to evaluate the

new quality assurance plan at East Tennessee State University's dental hygiene program in order

to determine its effectiveness in improving the quality of patient care indicators. By evaluating

ETSU dental hygiene program's quality assurance plan and by researching previous literature,

the results of this study may improve quality assurance practices and the quality of patient care at the ETSU dental hygiene program.

Research Design

A nonexperimental quantitative research design was used in this study to determine the effectiveness of the quality assurance plan at East Tennessee State University's dental hygiene program. According to Cottrell and McKenzie (2011) evaluation is a major responsibility of health education specialists. The evaluation process is critical to determine the effectiveness of a program, and evaluation outcomes can be used to make decisions about the program's future. After treatment was provided to patients by students, patient charts were randomly selected for audit. Because the objective of data collection in this study was to evaluate the appropriateness of care provided by students, no patient information was relevant to the research and therefore no personal patient identifiers or demographic data were collected or recorded. This ensured anonymity that "exists when there is no link between personal information and the research participant's identity" (Cottrell & McKenzie, 2011, p. 111).

The researcher used the Patient Record Audit form [Appendix B] created by the ETSU dental hygiene program faculty to collect data. Data were collected and recorded by hand in the form of total numbers in each category listed on the form. One hundred fifty charts were audited by the researcher from the summer 2013 and fall 2013 academic semesters. Prior approval from East Tennessee State University's Institutional Review Board (IRB) was obtained and data collection followed [Appendix C]. The ETSU IRB approval number is 0713.14sw.

Population

The population for this study included patients at East Tennessee State University's dental hygiene clinic. The demographics of the clinic's patient population included patients

ranging from pediatric to geriatric ages. Students are required by clinic standards to treat patients

of all ages, ethnicities, socioeconomic status, calculus classifications, and stages of periodontal

disease, thus patient characteristics vary widely. For this project, the only pertinent patient

characteristic was his/her oral health status because this determined the type of care that should

have been provided by the student. After treatment was provided to patients, a random sample of

patient charts was collected for review.

Data Collection Procedures

Data were collected for this project using the Patient Record Audit form [Appendix B].

Data were collected and recorded by hand by the researcher. All patient charts at the clinic are

stored in alphabetical order within secure filing cabinets located in the reception area. The

researcher was granted permission orally by the program director to conduct data collection in

this area. All data were collected on-site and no patient charts were removed from their secure

location. After patients were treated by students at ETSU's dental hygiene clinic, the researcher

chose a random sample of 75 charts for the summer 2013 and fall 2013 semesters, totaling 150

patient charts.

A criterion for chart selection was that the patient had been recently treated by a fourth

year (senior) dental hygiene student in order to ensure the collection of the most recent, relevant

data. At the time of data collection, third year (junior) dental hygiene students had not received

sufficient classroom education or clinical experience to be fairly assessed at this level of

performance. Audit reports contained only numeric data. No patient names or personal identifiers

were included in any aspect of data collection, analysis, or within the results of the study. Charts

were randomly hand-selected for audit and immediately returned to their previous location

following the completion of data collection. Each audit took approximately 30 minutes to complete.

For each academic semester, 75 charts were audited. This number was selected by the department faculty based on a percentage of the total number of patients treated at the dental hygiene clinic each semester and was believed to be sufficiently large enough to accurately reflect the patient population and to satisfy accreditation standards. The study sample was randomly selected and therefore results should be generalizable to the patient population at East Tennessee State University's dental hygiene program.

Data collected for this project included nominal data. Nominal data were collected on pages 1 and 2 of the Patient Record Audit form [Appendix B] by using "yes," "no," or "not applicable (n/a)" responses. Nominal data were collected for patient consent forms, tobacco use surveys, medical histories, radiographs, oral and gingival evaluation forms, dental charting forms, periodontal evaluation forms, oral hygiene and treatment plan forms, and treatment records. Each "no" response was considered a deficiency and was assigned to a quality indicator category and counted numerically. The research focuses on the total number of deficiencies within each quality indicator category. These categories include: assessment, treatment, documentation, referral, caries management, perio management, patient education, and follow-up.

Following the completion of data collection from 75 charts for the summer 2013 semester, a formal presentation was given to the fourth year (senior) students by a dental hygiene program faculty member. The presentation was held on-site at ETSU's dental hygiene clinic and used a combination of Microsoft PowerPoint presentation and typed-handouts. The presentation

included an explanation of the purpose, process, and expectations of the quality assurance program in addition to a quantitative summary of deficiencies found and proposed solutions.

Once students had treated 75 patients during the fall 2013 semester, the researcher was granted oral permission from the dental hygiene program director to collect data from 75 patient charts. Charts were randomly selected and data was recorded by-hand. All data collection was completed on-site in the dental hygiene clinic's reception area. No patient charts were removed from this location and were immediately returned to their previous location when the researcher completed the audit. Each chart audit took approximately 30 minutes to complete.

Informed Consent Consideration

All patients at East Tennessee State University's dental hygiene program sign a patient consent form including the Patient's Bill of Rights [Appendix A]. This form indicates their understanding and acceptance of the practices and policies of the clinic prior to being treated. Quality assurance and chart auditing have been a part of the ETSU dental hygiene program's self-assessment and accreditation standards for many years. These have always been internal processes that protected the patient's confidentiality. The requirement of further informed consent for this project was waived by East Tennessee State University's Institutional Review Board following the review and approval of the researcher's efforts to ensure patient anonymity.

Research Question

The following question guides this study:

1. Does the quality assurance program at East Tennessee State University's dental hygiene program improve the quality of patient care indicators through continuous quality improvement techniques?

Data Collection Instrument Development

The data collection instrument used in this study consisted of a three-page Patient Record Audit form [Appendix B]. This instrument was developed for use at ETSU's dental hygiene clinic by collaboration among dental hygiene department faculty. It was granted approval by the Commission on Dental Accreditation (CODA) in 2011 as a mechanism for quality assurance. A pilot study on this instrument was not required for this research because the instrument was in compliance with CODA standards. The researcher was not involved in the development of this instrument.

Data Analysis Procedures

"Content validity is established by having a panel (or jury) of experts comprehensively and systematically review the content of the proposed instrument using both qualitative and quantitative methods" (Cottrell & McKenzie, 2011, p. 150). The data collection instrument therefore possessed content validity because the Patient Record Audit form [Appendix B] was comprehensively reviewed by department faculty at ETSU's dental hygiene program and by CODA prior to its use in this project (Cottrell & McKenzie, 2011). Validity was negatively affected in this study by the students' documentation. At times during data collection (chart audit), it was unclear to the researcher if the student had correctly provided the treatment aspect but failed to document it properly or failed to provide the treatment aspect altogether. This could have yielded some false "yes" or "no" responses during data collection.

Internal validity is threatened in this study by two factors. One threat to the internal validity of the quality assurance process is the fact that each year, different students are responsible for the provision of care. Because the quality assurance plan uses patients' charts that have been completed by fourth year (senior) students, these students graduate each spring semester and the following year a new class of students will be treating patients whose charts are audited. In addition to this, the instrumentation method itself is a threat to internal validity because it could be interpreted several ways by the individual conducting the audits. The implementation effect or threat is seen when multiple people who provide the program services may not be equal in their understanding of the program or knowledge levels (Cottrell & McKenzie, 2011).

External validity cannot exist without internal validity and is difficult to control. External validity involves a study's results being able to be generalized to other groups beyond the study itself (Cottrell & McKenzie, 2011). Because dental hygiene programs vary widely in terms of patients, students, faculty, funding, requirements, and evaluation methods, establishing external validity would be difficult. Ideally a standardized system for quality assurance for dental hygiene programs could be established through further research and testing. Fairness cannot be measured quantitatively but refers to whether or not the treatment is appropriate for individuals of varying gender, ethnicity, or educational backgrounds (Cottrell & McKenzie, 2011). Because data collection and reporting procedures in this study did not take into account patients' personal characteristics, the study can be considered fair.

For this study data were collected by hand and analyzed using Microsoft Excel. A quality control chart was developed using statistical process control procedures for attribute data. Statistical process control techniques are useful in identifying variations in process and

improving quality. Quality control charts are visual graphs of process data that are easy to

interpret (Benneyan, 1998).

CHAPTER 4

DATA ANALYSIS

The purpose of this study was to evaluate the quality assurance plan at East Tennessee

State University's Dental Hygiene program in order to determine its effectiveness in improving

the quality of patient care indicators. By evaluating the dental hygiene program's quality

assurance plan and by researching various methods of quality assurance, the results of this study

may improve quality assurance practices and the quality of patient care at the ETSU dental

hygiene program.

Participants

The population for this study included patients at East Tennessee State University's

dental hygiene clinic. The clinic's policies make treatment available for anyone; therefore,

students treat patients of all ages, ethnicities, and socioeconomic status. Patient charts were

randomly selected for audit because patient demographics, including gender, age, ethnicity, or

occupation, had no relevance to this study and were not recorded. Criterion for chart selection

was that the patient had been treated by a fourth year (senior) student during the summer or fall

2013 semesters.

Results

The research question stated: Does the quality assurance program at East Tennessee State

University's dental hygiene program improve the quality of patient care indicators through

continuous quality improvement techniques?

Statistical Process Control

"The term 'statistical control' refers to the stability and predictability of a process over

time and to the type of variability that exists. A process that is completely stable over time

exhibits only natural variability, with its regular random behavior remaining unchanged, and is referred to as being in a state of statistical control" (Benneyan, 1998, p. 69). "Quality control charts are chronological graphs of process data that, although based in statistical theory, are easy for practitioners to use and interpret" (Benneyan, 1998, p. 69). Initially an np-quality control chart was created in order to establish a view of current process prior to the study's intervention, i.e. quality assurance program. The total deficiencies in all eight quality indicator areas were recorded over a period of 15 weeks. Results indicated that deficiencies in quality indicators were due to random variation, as expected.

Figure 1 demonstrates these findings.

Figure 1. Total Number of Deficiencies Recorded over a 15-week period
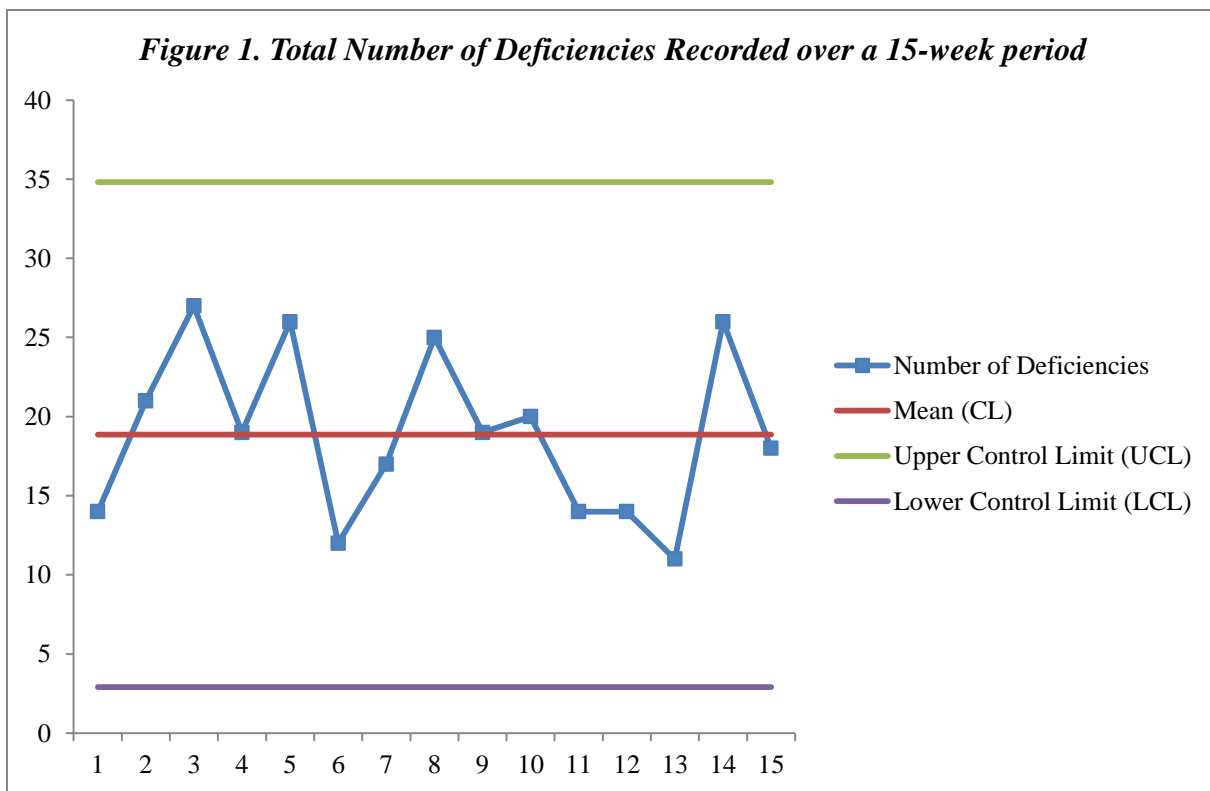
Pareto Principle

Based on the work of the economist Vilfredo Pareto, the Pareto principle, also sometimes referred to as "Pareto's law," is that "80% of all effects result from 20% of all causes" (Hardy, 2010, p. 38). According to Liebler and McConnell (2012) the purpose of a Pareto chart is to compare factors in order to determine priorities. By creating a Pareto chart of the data, the researcher was able to compare the eight quality indicators and determine which areas required the most improvement and should be treated as the highest priority.

The numbers of deficiencies decreased in the area of documentation; however, the number of deficiencies increased in the areas of referral, caries management, assessment, perio management, patient education, and follow-up. There were zero total deficiencies for the quality indicator of treatment for both data sets.

Table 2 demonstrates these results.

Table 2

Total Deficiencies in each Quality Indicator Category

Quality Indicator	Number of Deficiencies	Number of Deficiencies
	Summer 2013	Fall 2013
Documentation	138	122
Referral	84	93
Caries Management	29	30
Assessment	15	16
Perio Management	13	15
Patient Education	4	5
Treatment	0	0
Follow Up	0	1

A Pareto chart was created using Microsoft Excel for the initial data taken from 75 patient charts during the summer 2013 semester and again for the subsequent data collected from 75 patient charts during the fall 2013 semester. Totaling all quality indicators, 283 errors were recorded from the first set of data. In the second set of data, 282 total errors were recorded. Based on the Pareto principle, 20% of the eight quality indicators (approximately 1.6 quality indicators) should account for 80% of the total deficiencies.

Figures 3 and 4 demonstrate these results.

Figure 3.
Number of Deficiencies for each Quality Indicator, Summer 2013

Figure 4. Number of Deficiencies for each Quality Indicator, Fall 2013
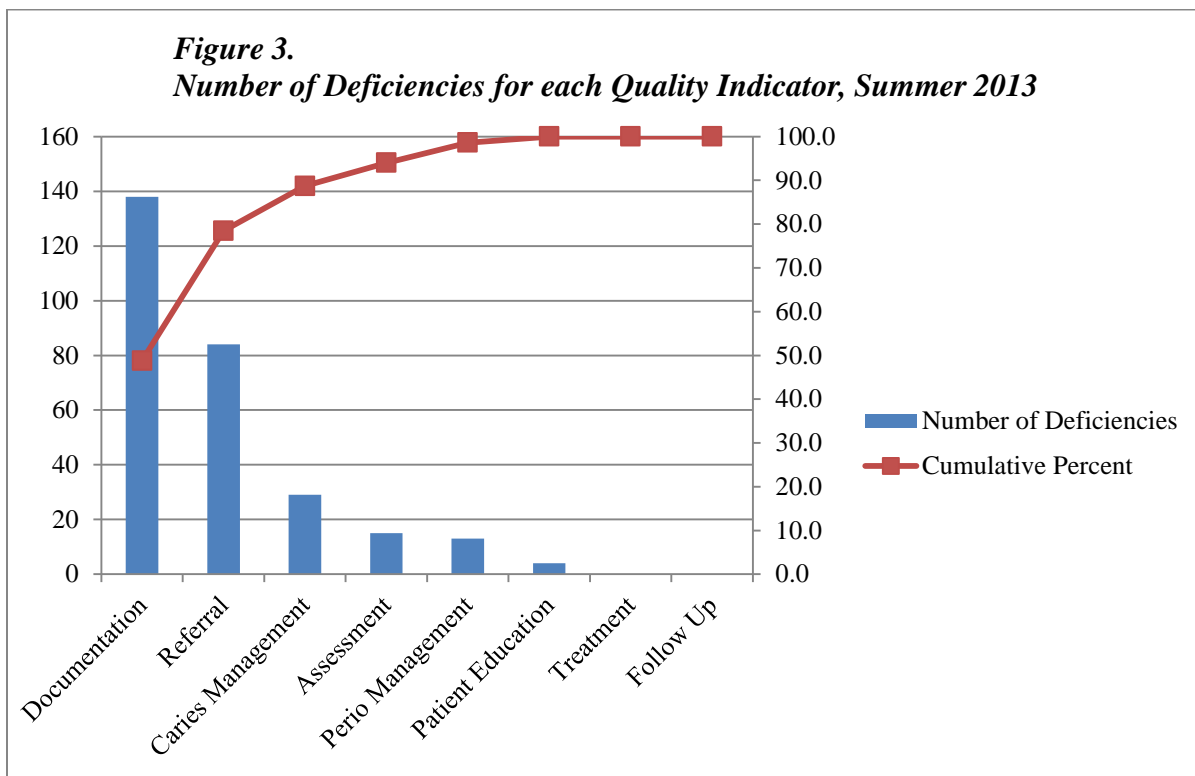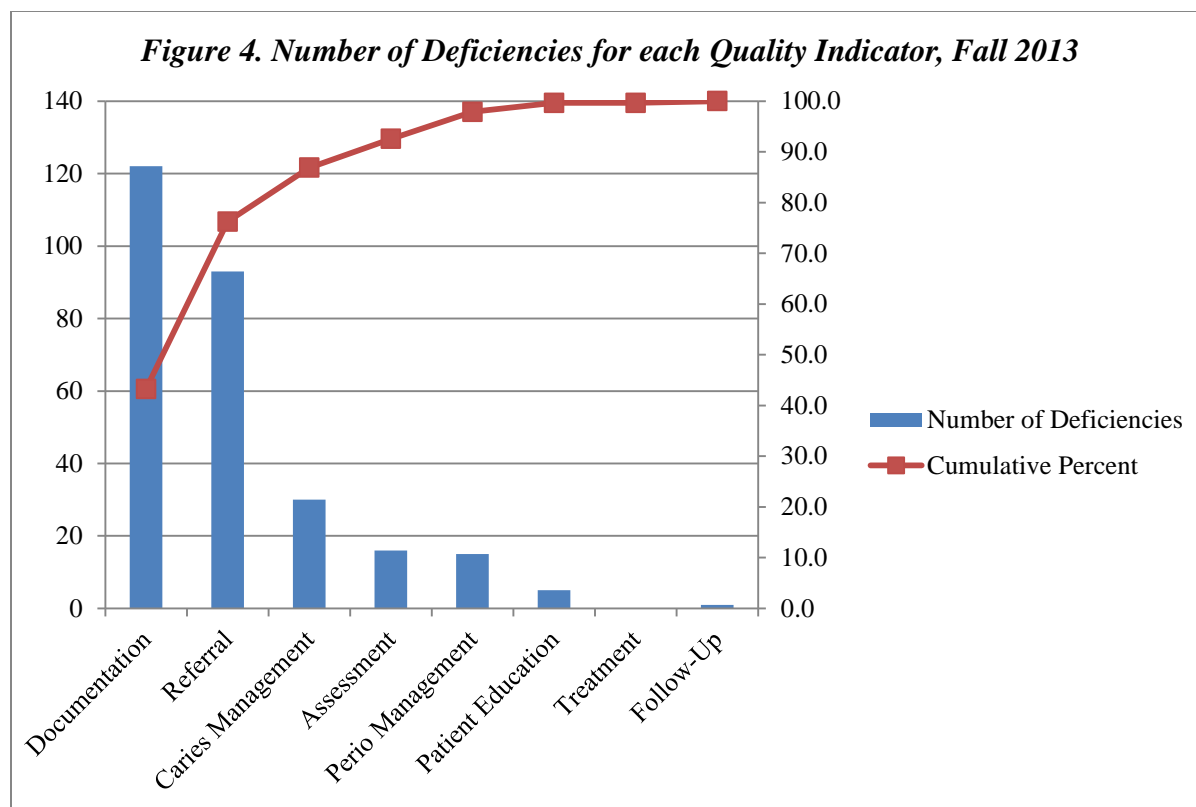
Discussion

This study was conducted based on data collected from charts of patients treated at the clinic from May 2013 through October 2013. By charting the data using statistical process control over a 15-week period, initial research findings demonstrated random variation among deficiencies in the eight categories of quality of patient care indicators. Limitations of this aspect of the research included not using at least 25-35 subgroups and not having sufficiently large subgroups (Benneyan, 1998).

Further research demonstrated a tendency toward the Pareto principle, as the quality indicators of documentation and referral accounted for 78.6% of the total deficiencies during the summer 2013 semester. Furthermore, those same indicators accounted for 76.2% of the total deficiencies during the fall 2013 semester. Although not all quality indicators saw improvement,

the research exposed both areas of strength and weakness and can be a useful tool to the East

Tennessee State University dental hygiene program and to other dental hygiene programs.

CHAPTER 5

CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS

As it has been said, quality assurance in healthcare is not a static concept and has grown and evolved dramatically over several decades. Chassin and Galvin (1998) stated, "No matter how good our understanding or measures of quality are today, we must always be prepared to revise them as new knowledge is generated about what works and what does not in healthcare to produce positive outcomes for patients" (p. 1001). Although there have been numerous methods of quality control presented and discussed within this study, the basis of many quality assurance programs is a cycle of measuring, judging, and improving (Dolmans et al., 2003). This study can therefore be considered the first phase of this cycle for East Tennessee State University's dental hygiene program and its quality assurance plan.

This study used the quality assurance method of chart audit in order to collect data and achieve its objectives. Research has shown that clinical audit can be successfully used to stimulate improvements in clinical practice (Packham, 1999). The audit cycle consists of practice review, problem identification, solution development, change implementation, and finally an assessment of outcomes. If deficiencies are identified as part of the audit cycle, change implementation is crucial in order to be successful at quality improvement (Patel, 2010).

The purpose of this study was to evaluate the quality assurance plan at East Tennessee State University's Dental Hygiene program in order to determine its effectiveness in improving the quality of patient care indicators. By evaluating the dental hygiene program's quality assurance plan and by researching various methods of quality assurance, the results of this study could improve quality assurance practices and the quality of patient care at the ETSU dental hygiene program.

Conclusions

Research was conducted on-site in the reception area at ETSU's dental hygiene clinic from July 2013 through October 2013 with oral permission from the program director. Charts were randomly selected from the clinic's secure filing cabinets and data were collected and recorded by hand by the researcher. Seventy-five charts were chosen for audit in the summer and fall 2013 semesters, totaling the 150 patient charts used in this study. Patient demographic information was not relevant to this research and therefore no personal identifiers were recorded.

An np-quality control chart was created from the first data set, providing a snapshot of current process at the clinic prior to this study. Findings from this revealed random variation in process when measuring the number of deficiencies over a 15-week period. The data, counted in numbers of deficiencies, were then grouped into eight categories of quality care indicators: assessment, documentation, referral, treatment, caries management, perio management, patient education, and follow-up. The numbers of deficiencies decreased in the area of documentation; however, the number of deficiencies increased in the areas of referral, caries management, assessment, perio management, patient education, and follow-up. There were zero total deficiencies for the quality indicator of treatment for both data sets.

A Pareto chart was constructed for the first and second data set from the summer and fall 2013 semesters. The Pareto charts effectively illustrated which areas of quality care indicators presented the greatest number of errors and thus should be given the highest priority for change and improvement. Results of this study also revealed a tendency toward the Pareto principle because approximately 20% of the causes (quality care indicators) comprised approximately 80% of the effects (number of deficiencies) (Hardy, 2010).

Conclusively, the study revealed that the current quality assurance program is not effective in improving all of the quality of patient care indicators. Although not all areas of quality care indicators exhibited improvement, one area did, indicating the potential of the quality assurance program to be effective in decreasing the number of deficiencies in quality care indicators. Furthermore, the Patient Record Audit form [Appendix B] was shown to be effective as a data collection instrument.

Discussion

Because the number of deficiencies increased in several areas and overall improvement was not shown, the study's research question asking "Does the quality assurance program at East Tennessee State University's dental hygiene program improve the quality of patient care indicators through continuous quality improvement techniques?" cannot be answered affirmatively.

However, although findings were inconclusive and not all areas demonstrated improvement, the results of this study did yield information valuable to the ETSU dental hygiene program and potentially other dental hygiene programs. The significant impact of this research comes not from its resulting numbers but instead from the strengths and weaknesses it identified in the current process of patient care delivery at the dental hygiene clinic. The primary strength identified was in the area of treatment in which zero deficiencies were found during data collection from both the summer and fall 2013 semesters. The weakest areas, in other words the areas with the greatest number of recorded deficiencies, were documentation and referral.

Recommendations for Future Research

It was concluded through this study that the current quality assurance plan at East Tennessee State University's dental hygiene program is not effective in improving all of the

quality of patient care indicators. The results of this study also determined that the Patient

Record Audit form [Appendix B] can be used as an effective tool for data collection. Validity

was negatively affected in this study by the students' documentation. At times during data

collection (chart audit), it was unclear to the researcher if the student had correctly provided the

treatment aspect but failed to document it properly or if the student had failed to provide the

treatment aspect altogether. This could have yielded some false "yes" or "no" responses during

data collection. Therefore, it may benefit the dental hygiene program faculty to further review

this instrument with close scrutiny, asking the question, "Can the complexity of caries

management, perio management, patient education, etc. truly be determined by student

documentation when reviewed retrospectively?"

When discussing proposed solutions, it is important to note external variables with the

potential to affect the study's results. External variables revealed through this study included, but

were not limited to, student-faculty ratio, off-site clinics, and patient appointment times. In

addition to considering external variables, another proposed solution is faculty or auditor training

and calibration and the establishment of inter-rater reliability. For the purposes of this study, one

individual (the researcher) was responsible for data collection and reporting; however, in the

past, patient chart audits have been conducted by multiple faculty members in the dental hygiene

department.

In order to achieve desired outcomes, faculty members will "need to know how to use

quality assurance and audit methods, and to see them as feasible and valuable for their work"

(Grol & Wensing, 1995, p. 548). For this reason the researcher suggests a pilot study, conducted

prior to data collection, in which at least three dental hygiene program faculty members are

required to audit the same patient chart for five different patients. This could establish inter-rater

reliability and increase the likelihood of the quality assurance program's success. The department may also wish to require the individual conducting future audits to review the same patient chart at two different times. The percentage of agreement for the two reviews could determine intra-rater reliability.

Finally, to benefit future research, the researcher suggests adding to statistical process control data by recalculating the control limits of the quality control chart when more data points are available. For example, recalculating every 6 months until 30 data points are included in the calculations.

Further research could answer the following questions:

1. How would this study's results compare with a study in which the individual collecting data also conducted the presentation of findings given to students?

2. How would the study's results compare with a study using a new dental chart form?

3. Are the results of this study affected by the student's providing patient treatment at off-site clinics?

4. How would the results of the study compare with a study conducted in which students used the quality assurance method of self-assessment and were responsible for conducting their own audits?

5. What role does the student-faculty ratio at the dental hygiene clinic play in the results of this study?

6. What role do patient appointment times play in the results of this study?

7. Do the students and faculty see quality assurance as an important tool in improving the quality of patient care indicators?

8. What role does education and calibration play in the results of this study?

9. Could the study benefit from the establishment of inter- and intra- rater reliability?

10. Could the results of this study be generalizable and applicable to other dental hygiene programs?

11. Could this study benefit from input and research from other dental hygiene programs?

By identifying areas requiring further investigation and improvement, the study's importance has been proven to the ETSU dental hygiene program. Furthermore "principles of quality measurement and improvement could be included in the education and training of future practitioners to better prepare them for this ongoing responsibility" (Chassin & Galvin, 1998, p. 1003). In conclusion, this study yielded valuable preliminary information; however, more research is warranted. It is the hope of the researcher that this study will broaden the knowledge and understanding of quality assurance in dental hygiene; increase the effectiveness of quality assurance among dental hygiene programs; serve as a catalyst to further the research on quality assurance in dental hygiene; and ultimately improve the quality of patient care provided at dental hygiene programs.

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APPENDICES

Appendix A

EAST TENNESSEE STATE UNIVERSITY

DENTAL HYGIENE CLINIC

PATIENT CONSENT FORM

Welcome to the ETSU Dental Hygiene Clinical Program. This program is designed to provide a thorough education experience for students while providing quality preventive services. In order to accomplish these objectives, please read carefully the following policies of this department.

1. The services provided in this clinic are not a substitute for the routine checkup and regular services provided by a dentist.
2. All new patients as well as patients who have not visited this clinic within the past two years will be required to first obtain a one-hour screening appointment. Upon completion of this appointment, you will then be assigned to a student.

> ***Simple cases may not be seen in our clinic depending on appointment availability.***

These patients should seek dental treatment from their private dentist if not contacted by this clinic within six months.

<ins>EVEN THOUGH YOU HAVE BEEN THROUGH THE SCREENING PROCESS,</ins>

<ins>YOU ARE NOT GUARANTEED A CLEANING APPOINTMENT.</ins>

3. Student hygienists are performing these services; appointments will be lengthy and may require multiple visits.
4. X-rays will be sent to your private dentist on request for a small fee.
5. Students follow a strict schedule, please be on time for appointments.
6. Cancellation policy: Cancellations are requested 24 hours in advance of the appointment to allow the student hygienist an opportunity to fill the appointment time. The students' clinical course responsibilities are extensive and dependent on patient compliance with appointments as scheduled. Therefore when a patient has three (3) cancellations documented in his/her file, we have the right to discontinue dental hygiene services from East Tennessee State University Dental Hygiene Clinic. We appreciate your time and consideration of these policies. Please sign below and return this form to the receptionist.
7. You may be denied treatment, if your condition is beyond the scope of our clinic.
8. Sometimes during the course of dental hygiene treatment, unexpected consequences may occur (such as losing a filling or crown). The dental hygiene clinic is not responsible. We do not have the personnel/equipment necessary for routine restorative care; therefore, we recommend that you see your family dentist for the necessary repair/treatment.
9. Permission is hereby given for treatment documented in my treatment plan and agreed upon by myself, my student clinician and faculty member including but not limited to x-rays, photographs, sealants, fluoride treatment, etc.

Thank You,

ETSU Dental Hygiene Program

_____

Signature

PATIENT'S BILL OF RIGHTS

Patients receiving dental hygiene therapy at the Dental Hygiene Clinic at East Tennessee State University have the right to...

1. Informed participation in all decisions involving patient's dental hygiene therapy program.
2. Privacy regarding source of payment for therapy. This includes access to care without regard to source of payment.
3. Complete and accurate information concerning the scope of care provided in the dental hygiene clinic.
4. Explanation in layman's terms of all proposed procedures including possibility of risks and side effects.
5. A complete and accurate evaluation of patient's condition and prognosis without treatment before giving treatment consent.
6. Designate another person to make treatment decisions for the patient.
7. Identify professional status and experience of all those providing care.
8. Not be discriminated against based on race, religion, national origin, sex, handicap or sexual orientation.
9. All information in patient's record.
10. Not have any test or procedure designed for educational purposes rather than the patient's direct personal benefit without the patient's consent.
11. Refuse any particular drug, test or treatment.
12. Privacy of both person and information.
13. Informed consent including the following:
    a. Description of recommended treatment
    b. Description of risks and benefits of recommended treatment
    c. Description of alternatives including risks and benefits of alternatives
    d. Probability of success and what the therapist means by success
    e. Problems anticipated in recuperation
    f. Any other information generally provided by qualified therapist.
14. Comprehensive dental hygiene therapy.
15. Referral to dentist of record for examination and evaluation.
16. Request forwarding of dental records and radiographs to their dentist of record.
17. Expect treatment be delivered as scheduled.
18. Information regarding patient distribution and eligibility for treatment.

FEE SCHEDULE

SERVICE	AMOUNT
Dental Cleaning	$ 20
Senior Citizens (Age 55 and Over)	No Charge for Cleaning
Sealants	$12 each
Full Mouth Radiographs/Panoramic	$30
Bite Wing Radiographs	$20
Single Film	$ 5
No payment is required for x-rays unless the films are removed from the clinic	

East Tennessee State University
Division of Dental Hygiene
Patient Record Audit Form

Chart Auditor:_____   Date:_____

Patient Name:_____

Patient Consent Form Includes:

	Yes	No	N/A
Patient, Parent or Guardian signature			

Tobacco Use Survey:

	Yes	No	N/A
Tobacco Use Survey			
Tobacco Use Chart Record			

Medical History Includes:

	Yes	No	N/A
Patient Name, address and phone numbers			
Vitals recorded			
Patient, Parent or Guardian signature			
Student signature			
Faculty signature			
Medical Alerts			
Medications			
Medical history complete			

Radiographs:

	Yes	No	N/A
Appropriate radiographs			
Patient signature for radiographs			
Faculty signature for radiographs			
Radiographs documented in treatment record			

Oral and Gingival Evaluation Form Includes:

	Yes	No	N/A
Patient name			
Student name and date for evaluations and re-evaluations			

Dental Charting Form Includes:

	Yes	No	N/A
Patient and student names and date			
PSR, if appropriate, completed with date			

Periodontal Evaluation Form Includes:

	Yes	No	N/A
Patient and Student names and date			
Date entry for evaluations			

Oral Hygiene and Treatment Plan Form Includes:

	Yes	No	N/A
Date			
Patient, Parent or Guardian signature			
Completed for appointment date			
Tobacco Cessation Counseling			
Caries Counseling			
Other treatment as appropriate			

Treatment Record Includes:

	Yes	No	N/A
Date			
Patient classification			
Patient name			
Student signature			
Faculty Signature			
MH, Vitals, E/I oral exam, Dental and periodontal charting, OHI, type of fluoride			
Re-care interval documented			
Documented referral			
Other treatment (Anesthesia, sealants, etc.)			

Chart Audit Form Includes:

	Yes	No	N/A
Signature in chart			
Returned to appropriate clinic coordinators			

Chart Audit – Quality Indicators

	Met	Un-met	Deficiency	Corrective Measures
Assessment				
Treatment				
Referral				
Documented				

Appropriateness/Necessity of Care

Perio Management	
Caries Management	
Patient Education	
Referral	
Follow-up	

Appendix C

IRB Approval Letter

East Tennessee State University
Office for the Protection of Human Research Subjects • Box 70565 • Johnson City, Tennessee 37614-1707
Phone: (423) 439-6053 Fax: (423) 439-6060

IRB APPROVAL – Initial Expedited Review

July 19, 2013

Jennifer Fielden

Re: An Evaluation of East Tennessee State University Dental Hygiene Program's Quality Assurance Plan
IRB#:0713.14sw
ORSPA #: n/a

The following items were reviewed and approved by an expedited process:
* xform new protocol submission, CV of PI

On **July 18, 2013**, a final approval was granted for a period not to exceed 12 months and will expire on **July 17, 2014**. The expedited approval of the study will be reported to the convened board on the next agenda.

The study has been granted a Waiver or Alteration of Informed Consent by George Youngberg, M.D., Chair, ETSU/VA IRB, under category 45 CFR 46.116(d).

The research involves no more than minimal risk to the participants as the study is a chart review and the data is not tagged with identifiers. The waiver or alteration will not adversely affect the rights and welfare of the subjects as the study is a chart review and the data is not tagged with identifiers. The research could not practicably be carried out without the waiver or alteration as the study involves a rapid review of numerous charts, identifiers are not tagged to recorded data, and some patients may no longer be under active care and there may be no reliable contact information. Providing participants additional pertinent information after participation is not appropriate the data is not tagged with identifiers and the results are not relevant to individual participants.
In addition, the ETSU/VA IRB Chair approved a HIPAA waiver of authorization.

Projects involving Mountain States Health Alliance must also be approved by MSHA following IRB approval prior to initiating the study.

Accredited Since December 2005

Unanticipated Problems Involving Risks to Subjects or Others must be reported to the IRB (and VA R&D if applicable) within 10 working days.

Proposed changes in approved research cannot be initiated without IRB review and approval. The only exception to this rule is that a change can be made prior to IRB approval when necessary to eliminate apparent immediate hazards to the research subjects [21 CFR 56.108 (a)(4)]. In such a case, the IRB must be promptly informed of the change following its implementation (within 10 working days) on Form 109 (www.etsu.edu/irb). The IRB will review the change to determine that it is consistent with ensuring the subject's continued welfare.

Sincerely,
George Youngberg, M.D., Chair
ETSU/VA Medical IRB

cc: Deborah Dotson, M.A.

VITA

JENNIFER E. FIELDEN

Personal Data: Date of Birth: July 11, 1989
                       Place of Birth: Morristown, Tennessee
                       Marital Status: Single

Education: Public Schools, Jefferson County, TN
                       B.S. Dental Hygiene, East Tennessee State University
                       Johnson City, TN, 2011
                       Graduated Summa Cum Laude, 3.96 GPA

                       M.S. Allied Health, East Tennessee State University
                       Johnson City, TN, 2013
                       Graduated Summa Cum Laude, 3.97 GPA

Professional Experience:

                       Registered Dental Hygienist, 2011-Present
                            Licensed in Tennessee #7349
                            Licensed in Virginia #0402205716
                            Licensed in Maryland, #6720

                       Graduate Assistant, East Tennessee State University
                       College of Clinical and Rehabilitative Health Sciences,
                       Department of Dental Hygiene, 2011-2012

                       Tennessee Dental Hygienists' Association (TDHA) Member Services
                       Council Chair, 2011-Present

Professional Certifications:

                       Certified in Cardiopulmonary Resuscitation

                       Certified in Local Anesthesia

                       Certified in Nitrous Oxide Administration and Monitoring

Honors and Awards: Selected as Outstanding Student in the College of Clinical and
                       Rehabilitative Health Sciences at East Tennessee State University

                       Recipient of the Outstanding Patient Education Award

                       Selected to be Student Delegate for 5th District of the American Dental
                       Hygienists' Association (1 of 12 students chosen nationwide)

Recipient of the Ruth Ketron Award, "For outstanding potential for future contribution to her profession"

Member, Sigma Phi Alpha, Dental Hygiene Honor Society, East Tennessee State University

Member, Alpha Eta Society, East Tennessee State University chapter, "Devoted to Scholarship in Allied Health"

Member, Association of Interprofessional Healthcare Students (AIHS), East Tennessee State University