NUCCA

National Upper Cervical
Chiropractic Association

Standards of Care and Practice Guidelines

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Introduction to the NUCCA Standards of Care and Practice Guidelines

Since the inception of chiropractic in 1895 there have been a multiplicity of techniques and procedures to address the concept of subluxation of the spinal column, motor units, and adjacent structures.

In the years 1941-1946 Dr. John F. Grostic of Ann Arbor, MI, and Dr. Ralph R. Gregory of Monroe, MI, collaborated in developing upper cervical procedures based on Dr. A. A. Wernsing's statement that, "the atlas moves laterally as if on the rim of a circle."[1] Drs. Gregory and Grostic added the concept of the condylar and axial circles, which became the starting point for what was then known as the Grostic Technique.

In 1966, NATIONAL UPPER CERVICAL CHIROPRACTIC ASSOCIATION (NUCCA) was formed under the leadership of Dr. Ralph Gregory. In 1971 NUCCRA, now known as the Upper Cervical Research Foundation (UCRF) since 2007, the research organization for NUCCA, was formed. Re-examination of the original basic work was done, research expanded, and newer methods of subluxation analysis and correction developed to such an extent that NUCCA came to symbolize a new technique by the time of Dr. Gregory's death in 1990. Today the process of improvement and refinement continues under the guidance of the NUCCA certification and standards board in partnership with UCRF.

Acknowledgements

We extend a special thank you and acknowledgement to the 2019 UCRF board of directors for reviewing this document. An extra acknowledgement is extended to Drs. Gordon Hasick, Craig Lapenski, Ben Kuhn and Ms. Kathy Waters from the Ralph R. Gregory Memorial Foundation (Canada) for their additional time in the final edits and details of this comprehensive and important document.

A special acknowledgement goes out to the International Straight Chiropractic Consensus Conference of May 1992 that produced the Wyndham guidelines for Straight Chiropractic. This work was published by Terry A. Rondberg DC, President of the World Chiropractic Alliance, Chandler AZ.

GENERAL DISCLAIMER

The Practice Guidelines for the National Upper Cervical Chiropractic Association is the result of a consensus of Doctor of Chiropractic utilizing procedures recommended by the National Upper Cervical Chiropractic Association. The purpose of this document is to present a set of generally accepted guidelines for NUCCA practitioners.

This document is advisory in nature and reflects the consensus arrived at by Doctor of Chiropractic practicing procedures recommended by the National Upper Cervical Chiropractic Association. It is not intended, nor should it be used, as a set of legally or ethically binding standards but as a method of guiding NUCCA practitioners in the proper care of patients in keeping with the purpose and methods of NUCCA chiropractic.

CODE OF ETHICS

1. The ethical foundation of the practice of chiropractic consists of those established moral obligations which ensure the dignity and integrity of the profession and honor its history and tradition.
2. The ethical chiropractor will accept the moral responsibility to act as his or her own ethicist. He or she will practice the profession with conscience and will observe the Golden Rule: "Do unto other as you would have them do unto you."
3. Conduct in the practice of the profession should be above reproach and will take neither physical, mental, social, nor financial advantage of the patient.
4. He or she will show concern for human caring and will share, whenever possible, control and decisions relevant to his or her professional services.
5. The profession will be practiced to the best of the chiropractor's ability, and education will be continued to improve clinical competence and thus, assure the confidence and respect of his or her patients.
6. The dignity of both colleague and patient will be respected by being truthful, honoring confidences, and acting with compassion.
7. The chiropractor will, in the public interest, preserve, protect, and communicate the expertise of the profession in legislative, public education, and research matters.
8. The chiropractor will collaborate with other recognized health care practitioners toward the ideal of teamwork, in which the rights of both the patients and the profession will be respected equally.

NUCCA POLICY STATEMENT

The NUCCA Policy Statement, which was originally adopted in 1966 and still stands today, states that the NUCCA chiropractic procedures are predicated on the restoration principle: the reduction to normal of the misalignment factors of the Atlas Subluxation Complex (ASC). This includes all methods and systems that reduce to or towards normal, the misalignment factors of the Atlas Subluxation Complex (ASC). The Restoration Principle, which is based upon specific and acceptable principles of misalignment reduction, therefore is a pre-determined and pre-directed process of correction.

Neither NUCCA nor UCRF are focused on the differences of opinion existing within chiropractic over the merits of different techniques. NUCCA / UCRF are focused on the upper cervical vertebrae because that region of the spine has shown the most potential for sustained positive clinical outcomes and lends itself to further chiropractic research. This research includes and may not be limited to, neuro-anatomy, neuro-physiology, the relationship between optimal upper cervical correction and posture, hemo and hydrodynamic changes in blood flow and CSF physiology.

PREFACE

By Daniel C. Seemann, PhD

NUCCA early on felt a need to publish a standards of care document for its members. At the April 1993 NUCCA seminar in San Francisco, a ten member committee started the laborious process of analyzing what NUCCA's standards of care were about. Respectful consideration was given to how the NUCCA standards fit with other upper cervical groups, chiropractic in general, and other health care systems.

Considerable time and effort were given by several committee members who should be recognized for their participation: Dr. Al Berti, Dr. Glenn Cripe, Dr. Keith Denton, Dr. Marshall Dickholtz, Sr., Dr. Marshall Dickholtz, Jr., Dr. Steve MacDonald, Dr. Lloyd Pond, Dr. Lonnie Pond, Dr. Larry Schrock, Dr. Edward Stein, Dr. R.L. Wiedemann, Dr. Lee Yardley and James F. Palmer. Special mention should go to Drs. Berti, Stein and Yardley for their effort in pulling all of the sections together which formed the final document.

How a standards of care document can improve the NUCCA practice of chiropractic becomes readily apparent. The fundamental value is to the practitioner who can feel confident that a body of knowledge accumulated from a research base and four decades of experience is available. If the field doctor is competent then other benefits will follow. If the patient is well served, satisfaction for both the consumer and the doctor are realized. The practice will grow by referrals from a solid base. The need to use ancillary procedures will not be needed and the doctor's status within the community will be enhanced.

As each doctor gains in his/her reputation, NUCCA also gains status through the network of doctors who practice the NUCCA work throughout the world. As the NUCCA reputation grows with other upper cervical groups, chiropractic in general, and other health care systems, the patient will be better served and the NUCCA field doctor can be proud to practice the NUCCA procedure.

The overall value of the document is that it can stand the test of those who would want to change it, but don't understand it. It is much better that NUCCA controls its own destiny rather than someone else. The development of this document is a giant step toward solidifying the future of this splendid health care system.

- Daniel C. Seemann, PhD

Dan Seemann was the executive director/research consultant for NUCCA for over 25 years. He was a professor emeritus at the University of Toledo. He received his BA from Columbia College, MA and PhD from the University of Toledo. He was also a retired Marine colonel.

Dr. Seemann was very active with the research and the promotion of NUCCA. He has written almost 50 articles concerning the upper cervical area. He is a charter member of the Academy of Upper Cervical Chiropractic Organizations and was appointed to the editorial board of the Journal of Vertebral Subluxation Research. Dr. Seemann passed away in 2018.

CHAPTER I

Definitions

NUCCA RATIONALE The NUCCA RATIONALE is based on the premise that the spinal column, skull, and pelvis deviate from the vertical axis resulting in tractionization to the central nervous system.

RESTORATION PRINCIPLE The principle that misaligned vertebra must be maximally restored to normal.

NORMAL Spinal alignment is normal when the skull, spinal column, and pelvic girdle are positionally and intersegmentally symmetrical relative to the vertical axis. Vertebrae that are aligned to the vertical axis execute normal motion whereas vertebrae whose centers of motion have deviated from the vertical axis execute abnormal or eccentric motion.

VERTEBRAL SUBLUXATION Vertebrae that are misaligned relative to the vertical axis in one or more orientation planes resulting in neurological stresses which produce measurable distortion of the spine, pelvis, and contiguous structures.

ATLAS SUBLUXATION COMPLEX (ASC) This term is a neologism intended to denote the far reaching and damaging effects of the subluxated occipital-atlanto-axial area of the cervical spine upon the spinal column and the human organism. It differs in meaning from the commonly used chiropractic term "atlas subluxation" or "atlas-axis subluxation" in that the term Atlas Subluxation Complex embraces the demonstrable mechanical and neurological phenomena which, through research, have been found to be associated with the subluxation of the occipital-atlanto-axial spine. Therefore, by definition, the term includes the atlas vertebra in all its planes of misalignment, its positional relationship to the occiput, subjacent vertebrae and pelvis, inclusive of the excursions of these structures into any or all of the bodily orientation planes; and resulting in concomitant detriment to the susceptive neurological components.[1]

ATLAS SUBLUXATION SYNDROME In this term the word syndrome is limited in meaning to include only the observable and measurable signs of an Atlas Subluxation Complex: objective signs. The Atlas Subluxation Syndrome is defined, therefore, as those signs which are always present and measurable in proportion to the intensity of the Atlas Subluxation Complex: Misalignment factors as shown by x-ray, resulting traction of the neurological component, presence of spastic contracture of the lumbar and pelvic musculature, distortion of the pelvic girdle, displacement of the body's center of gravity, contractured leg, and deviation of the spinal segments from the vertical axis of the body.[1]

NEUROLOGICAL COMPONENT This term includes that nerve structure which is deformed by traction, enfoldment, and compression resulting from the effects of the misalignment factors of the vertebrae, occiput, and the pelvic girdle regardless of the location of the nerve structure: skull, spinal column, or that nerve structure emitting through foramina of the skull and/or spinal column. Enfoldment of nervous structure is generally present. Traction may be, and generally is, both longitudinal and transverse.

The proximity of the atlas vertebra to the caudal end of the brain stem is significant. Any of the types of rotatory motion of which this vertebra is capable, as a result of trauma, can produce traction of the brain stem with damaging far-reaching neurological effects. Magoun states that the central reticular formation of the brain stem exerts ascending influences upon the cerebral cortex and gives rise to descending connections to the motor outflows from the spinal cord. The more cephalic of these connections facilitate spinal motor discharge while the more caudal region of the brain stem exerts an inhibitory action. Imbalance between the two mechanisms reduces the activity of the inhibitory connection which results in an innervational overflow to the motor units of the spinal cord.[2]

MISALIGNMENT FACTORS The misalignment factors are the measurable misalignments of the vertebrae of the spinal column and the positional relationship of the occiput to the spinal column; and includes the relationship of these structures to the vertical axis of the body and into any and all planes of motion as well as the ratio of magnitude that exists between an excursion into any given plane to that of any other plane of motion.[1]

VERIFIABLE ELEMENTS A verifiable element is any objective sign that can be measured, tested and reciprocally related to the Atlas Subluxation Complex. Examples are: Spastic contracture, pelvic distortions, contractured leg, center of gravity displacement and deviations of the spinal vertebrae from the vertical axis.[1]

CONTRACTURED LEG A leg is contractured (short) when it is not equal in length to its opposite member due solely to an Atlas Subluxation Complex.[1]

SPASTIC CONTRACTURE This term is applied to a shortening of muscle fibers resulting from overinnervation due to the effects of an Atlas Subluxation Complex. It is characterized by considerable resistance to passive stretch.

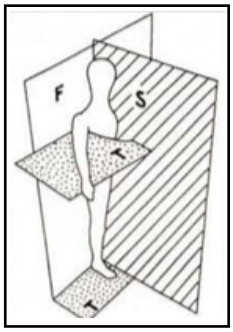
The term contracture is used in medical science to indicate several pathological conditions of muscle fibers. Steindler[3] defines spastic contracture as the cessation of the function of inhibitions which normally regulate muscle tone; he further states that it is the innervational element that is pathological.

NUCCA research has demonstrated that the Atlas Subluxation Complex causes a cessation of the function of the inhibitory influences that regulate muscle tone by the effect of the misalignment factors of the Atlas Subluxation Complex on the brain stem.

VERTICAL AXIS The vertical axis is formed by the intersection of the frontal and sagittal planes of motion. It is perpendicular to the ground. In the normal spinal column, the vertical axis passes through the center of gravity located in the pelvis at the point where all three planes of motion intersect. [1]

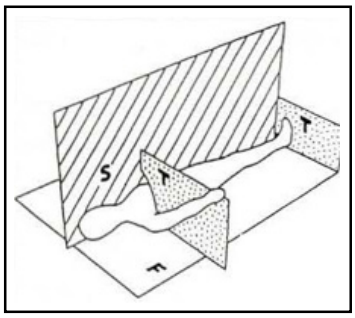
ORIENTATION PLANES OF THE BODY The orientation planes are planes of motion, and are frequently utilized in studies dealing with human motion (kinesiology). There are three planes: Lateral or frontal, sagittal and transverse; they correspond to the three dimensions of space.

Cardinal Planes of the Body



Each plane is perpendicular to each of the other two planes. Also there are three axes of motion, and each axis is perpendicular to the plane in which the motion takes place. The axes of motion are: (1) the vertical axis which is perpendicular to the ground; the (2) frontal (lateral) which is horizontal from side to side, and (3) the sagittal axis which is horizontal from front to back.

The Basic Planes in the Supine Position



The orientation planes serve as a frame of reference to which are related the abnormal excursions of the vertebral subluxation, the Atlas Subluxation Complex, the pelvic girdle, shoulder girdle, skull, etc. The orientation planes also serve as a teaching aid and a means of visualizing abnormal vertebral movements. Misalignments seen as having moved into a plane of motion and around an axis of motion become more meaningful than if just listed as right or left, superior or inferior, anterior or posterior. Vertebrae so visualized in degrees of misalignment by the adjustor assist him/her greatly in the correction of the subluxation. As a frame of reference the orientation planes establish a basis for analyzing the mechanics of abnormal vertebral motion, and for obtaining a clear perception of the effects of the misalignment factors on the neurological component.[1]

MANIPULATION Dictionary definitions inform us that to manipulate connotes a skillful use of the hands, management or control of tools, implements, persons, or non-physical problems and situations; to work with the hands (Latin: manus = hands).

ADJUSTMENT To adjust is to bring two or more things to agreement, to set right, to fit, arrange in order, to bring to a true or effective relative position; (Latin: ad-near to, plus quixta - close by or near).

Manipulation vs. Adjustment - A Discussion: In manipulation, the hands are the main instruments used. In adjusting, the adjustor's body is the tool. While both are arts, the adjustment is an art predicated on relevant scientific principles and the laws of physics, mechanics, and kinesiology. Therefore, in their performance considerable difference is apparent. In the objective to be obtained, lies the real and practical sense in which the two terms differ in meaning. One may manipulate to suit his means; one adjusts only to fit the misalignment factors of the Cl subluxation as analyzed from the patient's x-ray. The manipulator's objective may be concerned with the loss of the paraphysiological motion of the joints involved, but the adjustor's concern is with the correction of all the vertebrae that comprise the ASC, including the pelvis. This restoration of the spinal column to the vertical axis of the body makes the ASC a full-spine technique.

An adjustment, therefore, as performed by the NUCCA practitioner is a motor skill. "A motor skill is a group of simple natural movements combined in a new or unusual manner to achieve a predetermined objective." [4]

The adjustment, then, is a complex skill, using the entire body to deliver with extreme accuracy the force required to reposition several misaligned and subluxated vertebrae and the pelvis, and to balance the body's neurological state. The point at which the terms adjustment and manipulation differ in their meaning is in how they are accomplished and in the objective to be sought in their performance.

Thus, one can only conclude that the terms are not synonymous because they are not too similar, equivalent, or interchangeable in all situations.

ANATOMETER An instrument for monitoring the human body for measurement of Cl related spinal and bodily distortion prior to and after the adjustment.

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CHAPTER II

Patient Safety and Terms of Acceptance

NUCCA Chiropractic Practice Classification:

The NUCCA chiropractic practice is a limited, primary health care profession.

NUCCA chiropractors may receive patients directly, without referral from another provider.

The NUCCA chiropractic practitioner's responsibility and authority are limited to the anatomy of the spine-the condition of the atlas subluxation complex, and a scope of practice which encompasses addressing the atlas subluxation complex as well as educating patients and advising them about the atlas subluxation complex.

As members of a limited, primary health care profession, NUCCA chiropractic practitioners have the responsibility to determine the safety and propriety of applying their methods of analysis and adjustment to their patients; to recognize and appropriately deal with emergency conditions as described by the International Red Cross; and to report to the patient any non-chiropractic findings the chiropractor considers unusual that are discovered during the course of locating and characterizing the atlas subluxation complex. The limited nature of the profession dictates a responsibility and authority requiring the NUCCA chiropractor, in the interest of safety, to refrain from offering advice, diagnosis, prognosis, or treatment of non-chiropractic findings, while continuing to address the chiropractic needs of the patient.

NUCCA Chiropractic Practice Objective: The professional practice objective of a NUCCA chiropractor is to correct the atlas subluxation complex in a safe and effective manner. The correction of the atlas subluxation complex is not considered to be a specific cure for any particular symptom or disease. It is applicable to any patient that exhibits an atlas subluxation complex regardless of the presence or absence of symptoms or disease. Managing the patient to a biomechanical conclusion far exceeds patient management based on symptomatic relief. Monitoring the patient's progress with x-ray analysis, supine leg check, postural changes and additional instrumentation objectively identifies the success or failure of the NUCCA practitioner to restore normal form and function. It objectively identifies maximum improvement, stability and any residual impairment.

Recommendations:

A. Case History

The NUCCA chiropractor shall compile a case history to elicit information to assist in the administration of safe and effective care.

B. Chiropractic Analysis

The NUCCA chiropractor shall perform a chiropractic analysis for the determination of the presence and character of the atlas subluxation complex. This shall include the supine leg check and postural measurements of the hips and spine and may include other analytical procedures.

C. Chiropractic Findings

The chiropractor shall inform the patient of chiropractic findings.

D. Unusual Findings

Findings considered unusual by the NUCCA chiropractor, both related and unrelated to the atlas subluxation complex, which occur in the course of chiropractic analysis should be recognized and recorded.

E. Report of Findings

The patient must be informed of unusual findings both related and unrelated to the atlas subluxation complex. This includes information about which the NUCCA chiropractor does not offer advice, assessment of significance, diagnosis, prognosis or treatment, while continuing to address the chiropractic needs of the patient. The patient's acknowledgement of such findings must be recorded.

F. Plan of Care

The patient must be provided with a description of a plan of care for addressing the chiropractic findings.

G. Referral

a. Intraprofessional Referral: The NUCCA chiropractor should refrain from further care when the atlas subluxation is not being reduced and either consult with or refer the patient to another NUCCA chiropractor who, by virtue of ability or experience, may more effectively address the patient's atlas subluxation.

b. Interprofessional Referral: In the delivery of NUCCA chiropractic care, a practitioner may encounter findings which are outside the professional areas of his scope, responsibility, or authority to address. The NUCCA chiropractor has a responsibility to report such findings to his/her patient, and record their existence. Additionally, the patient should be advised that it is outside the responsibility and scope of the NUCCA chiropractic practitioner to offer advice, assessment of significance, diagnosis, prognosis, or treatment for said findings and that, if the patient chooses, he/she may consult with another provider, while continuing to have his/her chiropractic needs met as defined by NUCCA protocol.

H. Terms of Acceptance

The NUCCA chiropractor should establish the Terms of Acceptance, constituting an informed consent of a general nature which benefits both the patient and the NUCCA chiropractor. This agreement provides the patient with information upon which to base his/her decision to accept care. Included in the agreement are the NUCCA chiropractor's areas of responsibility and authority; professional objective; main area of interest; limitations and other areas. These topics adequately convey the reasonable benefits available to the patient and engender a proper patient expectation. The patient acknowledges an understanding of these concepts prior to the initiation of care. It is highly recommend the Terms of Acceptance should be recorded.

I. An example of a "Terms of Acceptance" form:

TERMS OF ACCEPTANCE

When a patient seeks chiropractic health care and we accept a patient for such care, it is essential for both parties to be working toward the same objective. It is important that each patient understand both the objective and the method that will be used to attain it. This will prevent any confusion or disappointment.

Health: A state of optimal physical, mental, social, and emotional well-being, not merely the absence of disease or infirmity.

Atlas Subluxation Complex: Neck vertebrae that are misaligned relative to the vertical axis in one or more orientation planes resulting in neurological and physiological stresses which produce measurable distortion of the spine, pelvis and contiguous structures.

NUCCA Adjustment: An adjustment is the specific application of controlled and gentle forces to facilitate the body's correction of vertebral subluxation. Our chiropractic method of correction is by specific adjustments of the spine.

As a clinic, we do not offer to diagnose or treat any disease or condition other than the Atlas Subluxation Complex, vertebral subluxation and peripheral joint subluxation. However, if during the course of your chiropractic care we encounter non-chiropractic or unusual findings, we will advise you to seek further care, diagnosis or treatment for those findings. We will recommend that you seek the services of a health care provider who specializes in that area.

Regardless of what your presenting condition is, we do not offer to specifically treat it nor do we offer advice regarding treatment prescribed by others. OUR PRIMARY PRACTICE OBJECTIVE is to correct the Atlas Subluxation Complex and support the stability of the spine. Our only method is specific adjusting using the NUCCA protocol.

Extensive research has shown many potential health benefits associated with the correction of the Atlas Subluxation Complex.

I, _____ have read and fully understand the above statements.
(print name)

All questions regarding the doctor's objectives pertaining to my care in this office have been answered to my complete satisfaction.

I therefore accept chiropractic care on this basis.

_____ _____
(signature) (date)

J. Informed Consent for Treatment:

An informed consent is a necessary part of NUCCA practice protocols. The consent for treatment should comply with your licensing jurisdiction as well as your malpractice carrier's requirements.

Since each jurisdiction may carry slightly unique requirements, therefore, it will be each practitioner's responsibility to check regularly and make sure they are in compliance with their jurisdictions license and also each malpractice carriers' standards.

This form should be reviewed by the doctor with the patient and signed by the patient prior to initiating any treatment. It should be reviewed with patients periodically throughout the course of their care and especially when a new injury or condition arises along their treatment pathway within the NUCCA practice.

CHAPTER III

Clinical Impression

I. INTRODUCTION

Appropriate interpretation of a patient's case history and examination must be made to determine if the patient has a chiropractic problem and, if so, to formulate an appropriate protocol for corrective care, developing a clinical impression by integrating and analyzing the patient's history and examination findings.[1,2,3] The doctor must determine the patient exhibits an atlas subluxation complex syndrome. The essential examination procedures that shall be used will be the supine leg check and postural measurements of the hips and spine. Other examination Cegers may be employed to further validate the presence of the ASC.

Guidelines for clinical impressions need to be established to distinguish chiropractic evaluation and care from those employed in other health care disciplines.

II. DEFINITIONS

Chiropractic Assessment: The process of integrating the clinical analysis to determine the presence or absence of the atlas subluxation complex. Specifically it is the integrating of the patient history with physical (supine leg check and postural measurements with hips and spine) imaging and instrumentation examination.

Contraindications: Historical and clinical findings and evaluation procedures which would lead the chiropractor to re-evaluate his/her usual clinical management to ensure patient safety.

Indications: Clinical findings which may indicate the presence of atlas subluxation complex.

III. RECOMMENDATIONS

Comment: The analytical procedures employed in the NUCCA protocol include, but are not limited to, the following:

Physical Exam[3,5,8]
- Palpation
- Range of motion
- Postural
- Comparative supine leg check (contracted leg)

Instrumentation Exam
- Thermographic instrumentation
- Range of motion instrumentation
- Postural analysis
- Bilateral or four quadrant weight scales
  Anatometer
- GSA/PSA

Radiographic and Other Imaging
- Spinography
- Videofluoroscopy
- Computerized
- Tomography Magnetic Resonance Imaging

1. **Quantification:** The chiropractor should employ a minimum of three analytical procedures to develop an initial assessment.
2. **Clinical Competency:** It is the responsibility of the chiropractor to be knowledgeable of and consistent with the methodology of NUCCA analytical/technical approaches, to maintain a system to execute the effectiveness of his/her procedures, and to maintain a high degree of technical excellence.
3. **Determining Appropriateness of Care:** The practitioner is responsible for determining the presence of the atlas subluxation complex and to recommend a plan of care to reduce the atlas subluxation. The chiropractor should make an assessment of the patient's initial clinical situation consistent with the patient's best interest and the chiropractor's clinical judgment.

   The chiropractor should be expected to recognize and respond to emergency situations, as described by the International Red Cross, and inform the patient of any findings the chiropractor considers to be unusual during the course of chiropractic analysis. It should be made clear to the patient that NUCCA chiropractors do not address disorders and conditions other than the atlas subluxation complex and emergency first aid situations.

4. **Determining Course of Care:** Once an initial clinical assessment has been determined, the chiropractor must evaluate his/her patient on each visit. This evaluation is to determine the presence or absence of the ASC and the specific care needed for that visit and then to render care as appropriate. The chiropractor shall employee as a minimum, the supine leg check and postural evaluation of the hips and spine along with any other analytical procedures on each visit.

   Modification in technique or evaluation procedures should be undertaken as necessary.

   Reassessment and reevaluation should be performed as the clinical need dictates and should be compared to the initial assessment.

5. **Referral:**
   a. **Intraprofessional Referral:** The NUCCA chiropractor should refrain from further care when the atlas subluxation is not being reduced and either consult with or refer the patient to another NUCCA chiropractor who, by virtue of ability or experience, may more effectively address the patient's atlas subluxation.

   b. **Interprofessional Referral:** In the delivery of NUCCA chiropractic care, a practitioner may encounter findings which are outside the professional areas of scope, responsibility, or authority to address. The NUCCA chiropractor has a responsibility to report such findings to his/her patient, and record their existence. Additionally, the patient should be advised that it is outside the responsibility and scope of NUCCA chiropractic to offer advice, assessment of significance, diagnosis, prognosis, or treatment for said findings and that, if the patient chooses, he/she may consult with another provider, while continuing to have his/her chiropractic needs met as defined by NUCCA protocol.

6. **Record Keeping:** The method of analysis, clinical assessment, and clinical impression should be accurately recorded in the patient's record.

7. **Patient Representation:** The reason the patient initially consults a chiropractor should be recorded in the patient record. The chiropractor should communicate the goal of his/her practice to the patient.

8. **Patient Education/Communication:** Clinical impression and its significance should be communicated to the patient in understandable terms. It is the responsibility of the chiropractor to educate patients as to the significance and consequences of the atlas subluxation complex. The chiropractor may communicate the causes, if possible, and the rationale for the detection and reduction of atlas subluxation. Additional information may be offered to help the patient adopt lifestyle practices that will help maintain their optimal spinal correction and stability.

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CHAPTER IV

Radiographic and Other Imaging

I. INTRODUCTION

The purpose of all imaging modalities recommended by the NUCCA organization is to gain information concerning the vertebral subluxation complex. Historically, basic radiography has been the sole imaging modality used[8,13]. Although basic radiography continues to be the primary imaging modality of chiropractic analysis, recent developments in imaging technology have provided alternative methods for gaining visual information about the vertebral subluxation[4,9].

This document presents the current knowledge concerning the proper utilization of imaging technology with particular emphasis on the clinical rationale, necessity, and significance of these modalities. This document is not intended to be a definitive work, but rather a basic framework which will be expanded as new information is gained through ongoing research in this subject area.

II. DEFINITIONS

AHARA: As high as reasonably achieved. The current doctrine that recognizes the risk of ionizing radiation exposure and, therefore, requires that all imaging yield the maximum analytical benefit to justify the risk.

ALARA: As low a reasonably attainable. The current doctrine recognizes that there is no safe level of exposure to ionizing radiation and, therefore, requires that all exposures are to be made at minimum risk.

Chiropractic analysis: Those procedures which disclose the presence, location, and character of a vertebral subluxation along with the determination of the safety and propriety of chiropractic care and the selection of an appropriate chiropractic corrective procedure.

Computed tomography: A variation on the traditional radiographic technology that provides for imaging in multiple planes.

FFD/SID: Focal film distance/source image distance. The FFD /SID setting governs the distance that the source of radiation is placed from the patient and the image recording device. Proper placement enhances image quality.

Filtration: The placement of metallic devices between the source of radiation and the patient to decrease the amount of radiation exposure given to a particular area.

Grids: Devices placed between the patient and the image recording device to reduce the amount of non-informative secondary radiation reaching the image recording device. The use of grids improves image quality, but increases overall patient dose.

Image recording device: Usually photographic film, but newer technologies provide for the image to be recorded on digital or directly digitized into computer memory.

Imaging analysis: Those procedures utilized to qualify and quantify components of the vertebral subluxation that are visualized by an imaging modality.

Imaging modalities: Those technologies used to obtain a visual record of internal anatomic structure(s).

Ionizing radiation: A portion of the electromagnetic spectrum that can alter the electron component of atomic structure. X-radiation can cause this effect and is thereby dam aging to biological systems.

KVP: Kilovoltage potential. The KVP setting governs the quality of the X-ray beam produced.

MAS: Milliampere (seconds). The MAS setting governs the quantity of the X-ray beam produced.

Magnetic resonance imaging: An advance imaging modality that uses magnetic fields and radio frequency to produce a high definition image of both hard and soft tissue structures of the body.

Medical diagnosis: Procedures that provide information concerning disease processes for the selection of therapy or treatment.

OFD/PFD: Object film distance/part film distance. The OFD/PFD setting governs the distance that the anatomic part of interest is place d from the image recording device. Accurate placement enhances image quality.

Plain film radiography: That branch of radiography that produces a simple 2-dimensional image of internal anatomic structure. It is the most common type of imaging modality utilized.

Processing: The technique of developing an image recorded on photographic film.

Radiology/radiography/radiographic image: An imaging modality that employs X-radiation to produce a visual record of internal anatomic structure(s).

Series: The number of images usually required to obtain a complete analysis of the area of interest.

Shielding: The placement of metallic devices (usually lead) between the source of radiation and the patient to eliminate radiation exposure to a particular area.

Stress study: Any image taken when the anatomic part of interest is in any position other than a neutral position.

Videofluoroscopy: A radiographic technique that produces a motion picture-like image. It is usually recorded on video tape.

III. RATIONALE FOR UTILIZATION OF IMAGING MODALITIES

A. Prime Directive

When clinical examination findings indicate the presence of the ASC, imaging modalities are utilized to determine the precise correction details of the ASC.

The use of such modalities shall be based on gathering clinical evidence that vertebral subluxation is present in the patient. The danger of ionizing radiation, present in most imaging modalities, contraindicates the use of these modalities without clinical justification.

The use of non-ionizing modalities should be governed by accepted clinical protocol with the primary concern being the patient's safety.

B. Secondary Directives

1. Selection of Adjusting Procedure

Imaging modalities may be utilized to provide information concerning the physical structure of the patient's spinal column, skull, and pelvis for the purpose of selecting or modifying an adjustment appropriate to the unique anatomic structure of that patient.

2. Contraindication Disclosure

Imaging modalities may be utilized to disclose possible contraindications to the application of adjustive forces to the spine.

C. Tertiary Directive

To protect the patient's overall welfare, the doctor shall inform the patient of all findings disclosed by an imaging modality.

The doctor shall inform the patient of those findings which are normally found in such an examination, and distinguish those normal findings from any that are unusual.

IV. RISK/BENEFIT ANALYSIS

The risk/benefit analysis is a theoretical model that governs the practice of health care, providing a paradigm within which the merits of health care procedures can be discussed. Simply put, the only justified procedures are those that are predicted to have a greater likelihood of providing a benefit to the patient than they have of causing the patient harm. It is theoretical since the risk/benefit odds associated with a procedure and any one individual patient cannot be specifically quantified.

A. Adult patients

For adult patients, the risk associated with obtaining a radiographic image utilizing maximum safety procedures is minimal. With demonstration of clinical necessity, the benefit of such a procedure to the analysis of the vertebral subluxation and, thereby, to the patient is high. The risk/benefit analysis favors the use of radiographic procedures in the adult patient.

B. Pediatric patients

The risk associated with obtaining a radiographic image for the pediatric patient (under age 16) is higher than that for the adult patient because ionizing radiation is more damaging to rapidly dividing cells. Placement enhances image quality[4,6]. The benefits of such procedures are the same as they are for the adult patient. The risk/benefit analysis favors discretion in the use of radiographic procedures in the pediatric patient.

C. Pregnant women

The risk associated with obtaining a radiographic image of a pregnant woman is high due to the potential of damage to the fetus[1-3,4,6,7,12] The benefits of such procedures are the same as they are for the average adult patient. The risk/benefit analysis favors avoidance of radiographic procedures in the pregnant woman, especially in the first trimester. Cervical and thoracic views, with appropriate protective measures, are permissible.

D. Radiation therapy patients

The risk associated with obtaining a radiographic image of a patient currently receiving radiation or radioisotopic therapy is very high due to the known cumulative effect of radiation exposure[1-3]. The benefits of such procedures are the same as they are for the average adult patient. The risk/benefit analysis favors discretion in the use of radiographic procedures in the radiation therapy patient.

E. Rebalancing of the risk/benefit analysis equation

The risk/benefit analysis is a dynamic thought process and, as such, is subject to a rebalancing that may countermand the general guidelines as in the following situations:

1. **Trauma:** The presence of trauma may increase the benefit portion to an extent which supersedes the risk portion and provide for the use of radiographic procedures in a patient for whom such procedures were previously contraindicated.
2. **Negative changes in the patient's general health:** The presence of negative changes in the patient's general health may increase the benefit portion to an extent which supersedes the risk portion and provide for the use of radiographic procedure in a patient for whom such procedures were previously contraindicated.
3. **Surgery:** Surgical procedures may increase the benefit portion to an extent which supersedes the risk portion and provide for the use of radiographic procedures in a patient for whom such procedures were previously contraindicated.
4. **Unusual or unexpected reaction to an adjustive procedure:** A severe reaction to an adjustive procedure may increase the benefit portion to an extent which superseded the risk portion and provide for the use of radiographic procedures in a patient for whom such procedures were previously contraindicated[3].

V. RECOMMENDATIONS

A. Plain Film Radiography

Purpose

1. To ascertain measurable biomechanical misalignments of the subluxation complex of the cervical spine and skull in the orientation planes.
2. To provide information concerning the hard tissue components of the spine, skull, and pelvis.
3. To provide information concerning the foraminal alteration component of the vertebral subluxation complex.
4. To provide information concerning the dynamics of spinal motion[5,8,10,11].

Clinical Necessity

Plain film radiography may be employed when clinical data indicates the presence of vertebral subluxation. The use of this procedure will yield analytical information appropriate to the analysis selected by the practitioner.

Technical Considerations

1. **Machine selection:** General guidelines (ALARA and AHARA) provide for the use of the machine that will produce the best possible image with the lowest patient dosage.
    a. **Single phase units:** These units are acceptable but provide for greater patient exposure than other types of equipment.
    b. **Three phase units:** These units provide superior image quality with patient dosages that are lower than single phase.
    c. **Medium or high frequency units:** These units provide image quality that is superior to single phase, with patient dosages comparable to three phase, and they have the advantage of easier installation.
2. **Film/screen combinations:** General guidelines provide for the use of a film/screen combination that will provide for acceptable image quality with the maximum reduction in patient dose.
3. **KVP/MAS selection:** General guidelines provide for the use of a fixed KVP/variable MAS technique to provide maximum image quality with optimum patient safety.
    a. **KVP:** An optimum kilovoltage should be utilized for the region of interest. This selection should be based on the machine and film / screen manufacturer‘s specifications.
    b. **MAS:** Milliampere seconds should be governed by the region of interest or by an automatic exposure control (BEC) system. This selection should be based on the machine and film/screen manufacturer’s specifications.
4. **FFD/SID selection:** General guidelines provide for the use of a distance appropriate to the OFD/PFD.
5. **Filtration:** General guidelines provide for the use of filtration to reduce patient dose.
    a. **Inherent filtration:** This is primarily a manufacturer’s specification in accordance with the NCRP recommendation #33.
    b. **Added filtration:** This should be utilized to reduce the patient dose over regions of interest where the use of a shield would limit analytical value, and for visually equalizing areas of the patient’s body and are of unequal radiographic density.
6. **Grids:** General guidelines provide for the use of grids to prevent secondary radiation from reaching the film. The use of grids improves radiographic quality and should be employed as per manufacturer‘s specifications or NUCCA’s recommendations.
7. **Shielding:** General guidelines provide for the use of shielding to eliminate patient dose over radiosensitive areas.
    a. **Collimation:** Maximum collimation to limit the primary beam to the area of interest is the primary method of eliminating unnecessary radiation exposure.
    b. **Gonadal shielding:** This is most appropriate for the male patient, since the gonads are not in the region of interest of a spinograph. It may also be used on the female patient if the practitioner is not seeking to obtain analytical information from an area which would be obscured by the shield.
    c. **Lead apron shielding:** A lead apron may be employed to eliminate possible primary beam exposure of the patient in areas other than the region of interest. This type of shielding is of little practical value, however, if close collimation is employed.
8. **Processing:** General guidelines provide for the use of optimum darkroom technique to obtain the maximum image quality. Manual or automatic processing techniques are acceptable.

9. **NUCCA X-ray alignment:** Equipment is to be in accordance with the NUCCA Alignment Handbook[14].

Analysis

1. **Qualitative:** This form of analysis is primarily visual in nature, providing for subjective interpretation of the film, and may be used for an initial evaluation.
2. **Quantitative:** This form of analysis provides for an objective mensuration of the misalignment component of the atlas subluxation complex. This form of analysis may be used to provide numerical data which can be provided for inter- and intraprofessional communication of findings.

Radiographic Series

1. **Minimum initial study:** NUCCA protocol includes neutral lateral, nasium, and vertex views of the cervical spine.
2. **Extra views:** Additional X-ray views may be added at the discretion of the doctor on a case-by-case basis. It is acknowledged and accepted that this may result in more than one view per projection.
3. **Regional studies:** Views may be obtained by region of interest at the discretion of the doctor when clinically indicated. Regional studies shall include a minimum of two views taken at opposition of 90 degrees.
4. **Postural studies:** Views may be obtained in various postural positions as clinically required. It is acknowledged and accepted that this may result in more than one view per projection with posture being the variable.
5. **Re-Evaluation Studies:** NUCCA protocol includes re-evaluation views following the initial adjustment.
6. **Re-Evaluation/Repeat Studies:** Are recommended when clinically indicated. Guidelines include, but are not limited to: trauma, significant changes in subjective or objective findings, or bio-mechanical rationale.

B. Other Imaging Technologies

Other imaging technologies: Videofluoroscopy, MRI, CT scan, and ultrasonography may ultimately provide information which would be relevant to NUCCA practice procedures. Due to the expense associated especially with MRI and CT imaging units, it is unlikely that they will be purchased by private practitioners.

C. Services/Billing

1. **Technical Component**

   The technical component is that part of the radiographic service that includes providing the facilities, equipment, personnel, and supplies necessary to obtain a satisfactory image.
2. **Professional Component**

   The professional component is that part of the radiographic service that includes the analysis and documentation of the findings evident on the radiographic image.

   a. **NUCCA Certified Doctors Use:** Some chiropractors may choose to consult with a certified NUCCA practitioner for further clarification of the vertebral subluxation complex existing in more difficult cases. The use of such a professional is acceptable and may ethically result in two professional charges per study.

   b. **Medical Radiologist Use:** As some chiropractors use the services of a medical radiologist in obtaining radiographs, it is conceivable that two professional charges may exist for the same study. This does not represent an unethical practice as each provider is producing a unique non duplicative impression of the radiograph. The medical radiologist is commenting on the medical/pathological significance relevant to his/her specialty, and the chiropractor on the vertebral subluxation analysis germane to his/her specialty[5].

c. Specialist in Chiropractic Imaging Use: Some chiropractors may choose to consult with a chiropractic radiologist for further clarification of the vertebral subluxation analysis. As the chiropractic radiologist is a doctor who has completed postgraduate studies to obtain a level of interpretive proficiency greater than that taught on the basic chiropractic college level, the use of such a professional is acceptable and may ethically result in two professional charges per study.

IV. SUMMARY

Imaging modalities, especially plain film radiography, have long been important methods used in vertebral subluxationanalysis. They provide objective data that can be shared both inter and intraprofessionally, and provide a basis for research and education in the chiropractic profession.

It is important to note that although imaging modalities provide important information concerning the vertebral subluxation, they should not be the sole basis for clinical decision. The vertebral subluxation is a dynamic process; for this reason, a proper analysis should draw upon a variety of analytical methods to provide a complete clinical picture that assures maximum patient benefit with minimum risk.

All of the imaging modalities used by the chiropractic profession have uses appropriate to other care professionals as well. This should not imply that any one health care professional has the obligation to interpret an obtained image to the specifications of another health care profession beyond the simple recognition of incidental findings which assure patient safety. To require anything else jeopardizes patient safety by requiring a health care professional to exercise judgment outside his/her area of expertise.

Since technology and research continue to progress at a rapid rate, access by the chiropractic profession to advanced imaging modalities will continue to improve. It is, therefore, probable that uses appropriate to the chiropractic profession's objective of vertebral subluxation analysis and correction will be discovered. This document will provide a framework by which these new uses can be properly evaluated and clinical protocols devised.

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CHAPTER V

Instrumentation

I. INTRODUCTION

The intent of this chapter is to describe the various instruments that are presently used by NUCCA chiropractic practitioners in the examination of their patients.

II. DEFINITION

Instrumentation: The use of any mechanical tool or device used to ascertain objective data, which can be recorded in a reproducible manner, about the condition of the patient relative to vertebral subluxation.

1. **Non-computerized Posture Analysis:** (e.g., Anatometer, plumb line, spinal stress analyzer, spinal analysis machine posturometer). Posture is often analyzed simply by visualizing the patient and making determinations based on that visualization. The procedure is often enhanced by a plumb line and other vertical and horizontal lines[1].
   a. **Anatometer:** The Anatometer is an instrument that measures and records in terms of the orientation planes of motion the presence of, the location of, and the severity of the distortion-stress effects of C-1 subluxations on the human body. This makes possible statistical analyses of reciprocal relationships between C-1 and misalignments and such distortion effects on the skeletal framework as directly result from the adverse effects of C-1 misalignment on the normal functioning of the nervous system.
   b. **Infrared Thermography:** Infrared instruments rapidly record changes in temperature and require no skin contact.
2. **Weight Scales Bilateral and Four Quadrant:** Unequal weight distribution has been shown to be indicative of spinal abnormalities[2,3,4,5,6]. Weight scales are a simple and effective means to determine weight distribution asymmetries[2,7,8].
3. **Inclinometry:** An inclinometer is a hand-held device that uses the constant vertical component of gravity as a reference and yields a measure of motion when held against the area being motion tested. Accuracy as been shown to be within 3 to 5 degrees[9].
4. **Goniometry:** A goniometer is a huge protractor that may be held in the proximity of the area being motion tested to provide a means by which to determine degrees of motion. A 10- to 15-degree of accuracy is common[10].
5. **Temperature Reading Devices:** Highly significant temperature changes have been noted in spinal and paraspinal tissues following a chiropractic adjustment[11]. Hand-held thermographic devices "have been evaluated and shown to have moderate to excellent inter-examiner reliability over short time durations[12].
   a. **Thermocouple:** 1) Single-channel (e.g. Chirometer), 2) Dual-channel (e.g., Neurocalograph [NCGH], Thermoscribe, Analograph).

      The dual probe devices give a bilateral comparative temperature reading of the paraspinal tissues. However, the instrument requires skin contact.
   b. **Infrared Thermography:** Infrared instruments rapidly record changes in temperature and require no skin contact.
6. **Surface Electromyography:** Electromyography (EMG) is the technique of collecting and recording the electrical activity of the muscles[13]. Surface EMG, also known as "scanning" or "kinesiologic" EMG, is a self-contained, hand-held scanner that measures electrical potentials associated with muscle activity by means of sensors placed on the skin over the muscle under observation. It enables scanning of paraspinal muscles over several vertebral levels. Very good test retest reliability has been shown due to ease of duplicating protocols for longitudinal studies[14,15,16,17,18,19]. Protocols and normative data for paraspinal EMG scanning in the chiropractic practice have been suggested by Kent and Gentempo[13,20].

The same authors have found that surface EMG potentials are substantially higher in children than in adults[21]. Gentempo reported that "electromyographic findings were consistent with the clinical and radiographic manifestations of subluxation and myospasm."[22] Significant changes in surface EMG potentials have been shown after a chiropractic adjustment[23].

III. DISCUSSION

Instrumentation has been used in chiropractic almost since its inception in 1895. Many advances in the accuracy and usefulness of the instruments have taken place. The use of instrumentation provides a scientific basis for analysis and outcome assessment in chiropractic practice. Due to advances that have been made in instruments germane to the analysis of vertebral subluxation over the past decade, it is anticipated that the contents of this chapter will require periodic updating.

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CHAPTER VI

Record Keeping

I. INTRODUCTION

This section reflects the components of a chiropractic practice that fulfill the NUCCA chiropractor's responsibilities for recording the existence of the doctor-patient relationship and establishing necessary patient consents. The goals are to provide guidance that will: 1) protect the patient; 2) document that the standard of practice is followed by NUCCA chiropractors; and 3) protect the NUCCA chiropractor.

II. OVERVIEW

The purpose of the health care record is to document specific services received by the patient. The record also provides valuable information in the event of legal challenge to the care provided[7].

Construction of an adequate record requires accumulation of essential information regarding the patient which may be derived from consultation, case history, examination, and special studies. Information from previous chiropractic care and other interventions may be included in the record. Essentially, the record should summarize the patient history and the propriety of chiropractic care. The record should also include evidence of appropriate patient consents and other agreements between the patient and the NUCCA chiropractors [3,5,6,8].

Once initial patient work-up has been completed, all entries to the record should be made in a systematic, organized, and timely manner. The NUCCA chiropractor is encouraged to update the record continually by using a charting system that is effective, efficient, and complete[2,10].

When sharing a record with anyone other than the patient, the NUCCA chiropractor should give due consideration to the confidential nature of the record.[3 9] Generally, obtaining the patient's informed consent to care is a process performed by the NUCCA chiropractor or staff and is summarized in the terms of acceptance (refer to Chapter II, H. and I. Terms of Acceptance). Usually preprinted forms are signed by the patient, and copies of these forms are kept as part of the record as proof that the consent process has been executed. A NUCCA chiropractor may consult with a national, state, or professional association regarding document design.

III. OVERVIEW

A. General

Peer Review: Evaluation by a NUCCA chiropractor of the quality, quantity, and efficacy of services ordered or performed by another NUCCA chiropractor.

Progress Notes: Brief notations recorded in the patient's file for each office visit.

B. Legal Definitions

Consent: Requires that the NUCCA chiropractor obtain a patient's permission before caring for him/her.

Rule of Confidentiality: Requires that all information about a patient that is gathered by the NUCCA chiropractor and/or staff as part of the record be kept confidential unless its release is authorized by the patient, compelled by law, or needed as evidence in a legal proceeding.

C. Types of Consent

Informed Consent: Requires that the patient's permission be based on an explanation by the NUCCA chiropractor of the program of care and expected outcome. Informed consent also implies the willing, uncoerced acceptance or refusal of a clinical intervention by a patient after the doctor adequately explains the nature of the intervention with its potential risks and benefits[12].

Informed Consent/Research: Requires that research subjects have adequate information regarding the research; are capable of comprehending the information; and have the power of free choice enabling them to consent voluntarily to participate in the research or to decline participation[12].

Consent to Care for Minors: Requires that, when the patient is a minor or is adjudicated incompetent, consent to NUCCA chiropractic care must be obtained from his or her parent or legal guardian[12].

IV. LIST OF SUBTOPICS

A. Internal Documentation

1. The Patient File
2. NUCCA Chiropractor/Clinic Identification
3. Patient Identification
4. Radiographic Identification
5. Patient Demographics
6. Health Care Coverage
7. Patient History
8. Examination Findings
9. Findings of Special Studies
10. Miscellaneous Assessments
11. Clinical Impression
12. Plan of Care
13. Chart/Progress Notes
14. Chart Entries
15. Reexamination/Reassessment
16. Financial Records
17. Records Storage

B. External Documentation

1. Direct Correspondence
2. Health Care Records
3. Diagnostic Imaging and/or Analytical Imaging
4. External Reports

C. Record Organization

1. General Considerations
2. Use of Pre-printed Forms
3. Legibility and Clarity
4. Use of Abbreviations/Codes

D. Maintenance of Records

1. Confidentiality
2. Records Retention
3. Administrative Records
4. Records Transfer
5. Clinic Staff Responsibilities

E. Patient Consents

1. Informed Consent/Consent to Care
2. Consent to Care-Competence
3. Authorization to Release Patient Information
4. Financial Assignments
5. Consent to Participate in Research
6. Publication Photo Video Consent
7. Authority to Admit Observers

V. RECOMMENDATIONS

A. Internal Documentation

Internal Documentation refers to the accumulation of records generated within the NUCCA chiropractor's office.

1. The Patient File

When a new patient enters the office, an initial record, which becomes the foundation of the patient's permanent record, is created. An initial record may include personal patient data (name, address, phone numbers, sex, occupation), insurance and billing information, appropriate assignments and consent forms, case history, terms of acceptance, examination findings, imaging, progress notes for recording ongoing patient data obtained on each visit, the services rendered, clinical impression, health care plan, copies of insurance bills, reports, and correspondence. This initial record should be labeled and filed to facilitate retrieval.

All elements of the permanent record should be easily accessible (i.e., folder) and identified with the patient's name and identifying code.

2. NUCCA Chiropractor/Clinical Identification

Basic information identifying the chiropractor or facility should appear on documents used to establish the NUCCA chiropractor-patient relationship. Basic information may include:

- NUCCA chiropractor's name/specialty
- Specialty designation
- Facility name
- Legal trade name
- Street address and mailing address
- Telephone/fax number(s)
- Website
- Email Address

3. Patient Identification

Clear identification of the patient and relevant demographic information is a necessary component of the record. The identifying information may include:

- Patient's name
- Patient's birth date age
- Address(es)
- Telephone number(s)
- Social security number
- Consenting parent or guardian name, if appropriate
- Name and phone number of person to contact in case of emergency (closest family member or relative, next of kin)
- Case/file number, if appropriate

4. Radiographic Identification

All radiographs shall have proper identification including:

- NUCCA chiropractor/facility name and address
- Patient name, age/DOB/M,F
- Date radiograph taken
- Study (pre, post)
- Right/left
- Identification number

5. Patient Demographics

- Gender
- Occupation
- Marital status
- Number of dependents
- Employer's name, address, phone number
- Spouse's occupation, address, phone number

6. Health Care Coverage

While financial data is important for the business function of a health care facility, and such records are indeed a part of the health care record, the information obtained and the format of obtaining that information is at the discretion of the NUCCA chiropractor. Possible information includes:

- Current incident result of accident or injury?
- Insurance company or responsible party (auto/work comp/health/other)
- Group and policy numbers, effective date
- Spouse's insurance company and policy information, if applicable

7. Patient History

This process may provide an adequate picture of the patient's perception of the need for care. Important elements of the history may include[15]:

- Date history taken
- Presenting complaint
- Description of accident or injury, other etiology
- Past history, family history, social history
- Past and present medical treatment and chiropractic care, and attempts at self care
- Person eliciting history, signatures or initials
- Questionnaires, drawings and information personally completed patient may be included in the history other by the patient

8. Examination Findings

Objective information relative to the patient's history is obtained by assessment of the Physical Manifestation of the Atlas Subluxation Complex. If abbreviations are used, a guide should be available. Included on any such documentation is the date of the examination. If persons other than the attending NUCCA chiropractor perform and/or record elements of the objective examination, his/her name and/or initials should appear on the exam or data form. Examples of such examination findings may include:

- Supine leg check findings *
- Postural measurements including the hips and spine*
  *(*required examination findings each visit)*
- Motion palpation chiropractic examination procedure
- Instrumentation
- X-ray
- Unusual findings outside the scope of NUCCA chiropractic

9. Findings of Special Studies

Documented results of special studies become a component of the record. This documentation should include date of study, facility where performed, name of interpreting NUCCA chiropractor or physician, and relevant findings. Special studies may include:

- Diagnostic Imaging (e.g., may include plain film radiography)
- Structural imaging that may include video radiography (fluoroscopy), MRI, CT.

10. Miscellaneous Assessments

Miscellaneous assessments and various other documents can contribute to clinical management and serve as components of the record. These should be retained on file.

11. Clinical Impression

After obtaining the subjective and objective data, the NUCCA chiropractor can begin to create a clinical impression. This may take the form of a preliminary single impression or include several differential impressions. The clinical impression may change with new clinical information in response to the patent care. Thus it is important to have each clinical impression recorded and dated.

12. Plan of Care

When a plan of care is proposed, it should be recorded in the patient record.

The written plan of care may appear on a form dedicated to the clinical work-up or may appear in the record. It may include:

- Reassessment plan
- Chiropractic plan of care
- Patient educating plan

13. Chart/Progress Notes

Once the initial work-up has been completed, record entries should be made each time the patient is seen. Record entries should be made in a systematic, organized manner. A dated record of any significant changes in the clinical picture, assessment, or plan of care should be noted. It is the chiropractor's preference how chart notes are recorded [11,13,14,17].

14. Chart Entries

Anyone other than the attending NUCCA chiropractor who enter data into the record should initial his/her entry.

15. Reexamination/Reassessment

All relevant information from every reassessment or reexamination should be recorded in the patient's file.

16. Financial Records

Financial data is important for the business function of a health care facility in order to avoid billing disputes. Such data is part of the health care record and may include:

- Patient account ledgers
- Billing statements
- Explanation of benefits (EOB) from payers, and proof of payment
- Special fee arrangements, with related signatures and consents

17. Records Storage

The information stored and the means of storage and retrieval is at the discretion of the NUCCA chiropractor. It is recommended that a description be made of the stored information for easy access.

B. External Documentation

External documentation includes all records originating outside the NUCCA chiropractor's office, but also includes any communication with an informed third-party.

1. Direct Correspondence

Correspondence in the form of letters or memoranda that leaves the NUCCA chiropractor's office should have information identifying the chiropractor and/or clinic, address, telephone number, and should be dated. A copy should be kept in the patient's record.

2. Health Records

Health records from outside sources should be retained. Such records may include[4,16].

- Pertinent copies of health care records from previous NUCCA chiropractors and other health care providers
- Special consultative reports
- Reports of special studies

3. Diagnostic and/or Analytical Imaging

Any x-rays, copies or related reports obtained from an outside source should be retained on file. If retention is not possible, a note should be made in the record.

4. External Reports

Frequently the chiropractor will be required to write various reports. The information to generate reports comes from the record. A copy of all such reports should be retained.

C. Record Organization

1. General Considerations

Records should be kept and recorded in chronological order. They should not be back-dated or altered. Corrections and additions should be dated and initialed. The record should be fully documented and contain all relevant, objective information. The record should be complete enough to provide the doctor of chiropractic with information required for subsequent patient care, or for reporting to outside parties.

2. Use of Pre-printed Forms

The use of forms can assist the NUCCA chiropractor in tasks such as obtaining case history, noting examination findings, and charting case progress. The use of forms is at the discretion of the individual practitioner but should be complete and comprehensive.

3. Legibility and Clarity

The records should be neat, organized, and complete. Entries in charts should be written legibly in ink. Entries should not be erased or altered with correction fluid (whiteout) or tape, or adhesive labels, etc. If the contents of any document are changed, the chiropractor should initial and date such changes in the corresponding margin.

4. Use of Abbreviations/Codes

Use of abbreviations or codes can save time and space within the record. An interpretation of such codes or abbreviations should be made available in the office so that another practitioner or interested person can utilize the information with confidence. Codes and abbreviations may also serve as an in-house list for intra-/inter office communication and dictation aids[10].

D. Maintenance of Records

1. Confidentiality

The rule of confidentiality requires that all information about a patient gathered by a health care provider as part of the doctor patient relationship or program of care be kept confidential unless its release is authorized by the patient, compelled by law, or needed as evidence in a legal proceeding. Confidentiality is necessary to encourage individuals to be honest and forthright with the provider. There are certain things that, by their nature, should remain private. This is embodied in doctor-patient privileged communication.

2. Records Retention

Health records should be maintained in a way that facilitates retrieval, and to the extent possible, should be kept in a centralized location. In most circumstances, recent records are maintained in the office, and after a period of time can be archived. The length of time that records must be kept varies. Many jurisdictions have requirements for the minimum period of time health records must be retained (usually between five and fifteen years).

If there is no requirement of jurisdiction, it is recommended that records be retained for at least seven years. When the decision is made to dispose of the health records, the disposal must be done in a manner

that protects patient confidentiality. If a chiropractic office closes or changes ownership, retention and safekeeping of the records should be ensured.

Health records may be retained even after the legal time limit has elapsed, due to the value of the information they contain.

3. Administrative Records

Administrative records primarily concern the non-clinical side of the practice, but there is an overlap into the doctor/patient relationship. Examples of administrative records include: telephone logs, scheduling and recording appointments, patient sign-in sheets, patient personal data information, insurance forms and billing, collection and patient billing, routine correspondence, attorney and third party billing, and a record filing system that makes for an accurate retrieval of patient data. These records shall be maintained in a legible and retrievable manner.

4. Records Transfer

It is mandatory that health care data requested by a provider currently caring for a patient (excluding data and reports from outside sources) be forwarded in a timely manner upon an appropriate request and signed patient consent. In some jurisdictions, the forwarding of information to another health care professional is required by statute. A charge for such services is at the discretion of the NUCCA chiropractor.

5. Clinic Staff Responsibilities

The doctor is responsible for staff actions regarding record keeping and consent forms, and for assuring that administrative tasks are handled correctly and promptly. An employee involved in the preparation, organization, or filing of records should fully understand both how they are to be processed and the rules of confidentiality.

E. Patient Consents

1. Informed Consent /Consent to Care

Patient consent to care is always necessary. It is often implied rather than expressed. The best record of consent is one that is objectively documented (e.g., a written consent, videotape, or voice recording). See Chapter II for example.

2. Consent to Care-Competence

A patient must be competent to give consent to care. The care of minors (age of majority varies according to jurisdiction) and mentally incompetent adults require s the prior consent of a guardian.

3. Authorization to Release Patient information

With the consent of a competent patient, records may, and in most situations must, be provided to third parties with a legitimate need for access. Whenever health care information is released pursuant to authorization from a patient, documentation of the authorization should be requested and retained (except in emergencies), or when it would serve some overriding purpose (e.g., another health care provider caring for the patient; another person for health education, planning, quality assurance, peer review, actuarial, legal, financial or administrative purposes where the confidentiality is maintained; minimize an imminent danger to the patient; for bona fide research purposes where the patient is not identified; and to auditors or to penal authorities. The health care provider must disclose patient health information to public health authorities or law enforcement agencies when required by law, or to a court when required by compulsory legal process). The original record should never be released except when compelled by law or needed as evidence in a legal proceeding; otherwise, only copies should be sent.

4. Financial Assignments

While financial data is important for the business function of the health care facility (and such records are indeed part of the health care record), the information obtained and the method of acquiring such information should be left to the judgment of the NUCCA chiropractor.

Any alteration of standard fees charged should be documented (e.g., in cases of financial hardship).

5. Consent to Participate in Research

When a provider engages in research, the ethical basis of the doctor/patient relationship changes to an investigator/ subject interaction. The new relationship should meet a new set of criteria.

Request for a patient to participate in a research study or project should be accompanied by a signed consent form that meets the minimum requirements for the protection of human subjects as established by competent authorities (e.g., NIH/NSF or state law).

6. Publication/Photo Video Consent

All records relevant to clinical management from which a patient may be identified (e.g., photographs, videotapes, audiotapes) should only be released after consent has been obtained. Such consents should identify the purpose of the record and the circumstances under which it will be released.

7. Authority to Admit Observers

A person not participating in the ca re of the patient should not be permitted to watch examinations or procedures without the consent of both the NUCCA chiropractor and the patient. If the patient is a minor or has been adjudicated incompetent, consent may be given by the patient's parent or guardian. It should be noted that, in some jurisdictions, a minor or incompetent has a confidential relationship with the NUCCA chiropractor which may not be superseded by a parent or guardian. This consent may be written, oral, and/or implicit.

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CHAPTER VII

Reassessment

I. INTRODUCTION

Reassessment presupposes an earlier appraisal. In the case of NUCCA chiropractic care, reassessment is comprised of the supine leg check and postural measurements of the hips and spine along with replication of tests and examinations that were previously performed to establish presence or absence of the atlas subluxation complex in the patient. This information assists the chiropractor in evaluating the patient's progress.

Examinations performed during the initial stages of a patient's chiropractic care give the chiropractor a starting point from which to monitor the patient's progress[3,6,7,16-19,20,22].

There are a number of kinds of examination procedures used to give indications of the presence of atlas subluxation complex[1,2,5,8-10,12,15]. With information supplied in the case history and observation, the chiropractor will decide which examinations will furnish the best data.

Different patterns and types of reassessments can be done during care[4,11,13,14,21,23]. It is inherent in chiropractic care that the patient be regularly reassessed as to his/her need for a chiropractic adjustment. Per-visit reassessments monitor a patient's progress and give essential data in regard to the need for a chiropractic adjustment. The ever changing dynamics of a body's recuperative capacity assumes change will occur over time. Therefore, periodic reassessments are performed. This examination information is then compared directly to previous findings.

II. DEFINITIONS

Full Reassessment: A more comprehensive examination should include three or more previously performed assessment procedures.

Initial Findings: Refers to the collected cumulative information that indicates the presence of atlas subluxation complex. The findings are used as a baseline to assess a patient's progress.

Partial Reassessment: An examination given that is less than a full periodic reassessment. Should include at least two previously performed assessment procedures.

Per-visit Reassessment: An examination given each time the patient is in the office for chiropractic care. This shall include supine leg check and postural evaluation of the hips and spine as well as any previously performed assessment procedures.

Progress: Improvement in the objective findings.

Reassessment: Evaluations for the purpose of following the progress of a patient under NUCCA chiropractic care and to generate data for impressions and outcome assessment.

School of Thought: A common philosophy that guides the actions and purpose of a group.

III. SUBTOPICS

A. Value of Reassessment

B. Performing the Reassessment

C. Discussion of Outside Reviews by Other Professionals

D. Frequency of Reassessment

1. Per-visit Re assessment
2. Partial Reassessment
3. Full Reassessment

IV. RECOMMENDATIONS

A. Value of Reassessment

In a NUCCA chiropractic practice, the initial assessment is documented and recorded. The purpose of these findings is to give the chiropractor information concerning the presence and details of the atlas subluxation complex.

The chiropractor must determine, on a per visit and periodic basis, how the patient's care is progressing; therefore reassessment examinations are performed. This process provides quantitative and qualitative information about the patient's progress which is utilized to determine the frequency and duration of chiropractic care.

B. Performing the Reassessment

As a general rule, reassessment examinations are made by performing those procedures appropriate to t he current status of the patient relative to atlas subluxation complex. The reassessment findings are then compared to the previous findings to determine the patient's progress.

C. Discussion of Outside Reviews by Other Professionals

Normally, reassessments (reviews) performed for a third party payer by an IME (independent medical examiner) should be carried out by a peer within the NUCCA chiropractic profession who embraces the same school of thought and utilizes the same examination criteria.

D. Frequency of Reassessment

1. Per-visit Reassessment

The chosen series of testing procedures are performed each time the patient is in the chiropractor's office for chiropractic care. This shall include supine leg check and postural evaluation of the hips and spine as well as any previously performed assessment procedures from the initial visit.

2. Partial Reassessment

Partial reassessment involves duplication of two or more preceding positive analytical procedures.

3. Full Reassessment

Full reassessment involves duplication of three or more preceding positive analytical procedures. Any additional or complementary analytical procedures can be performed based on the current clinical status.

Comment: Partial or full reassessment may be performed on a case-by-case basis at the discretion of the doctor.

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CHAPTER VIII

Outcomes Assessment

I. INTRODUCTION

Health care should be characterized by quality, effectiveness, and cost efficiency. The future focus of health care services will be on maximizing biologic function and postponing the inevitable physical decline of the patient[33]. To ensure effectiveness and efficiency, multilevel outcomes assessments of health care services must be instituted[30]. Patients, practitioners, payers, state boards, health care institutions, government agencies, etc. must be continuously involved in gathering and evaluating assessment data, as well as recommending and implementing changes in health care delivery[70]. Outcomes management has evolved into a technology of patient experience designed to provide all interested parties with better insight into the consequences of health care choices on a patient's life"[29,30,56,71].

Chiropractic emerged in 1895 as a vitalistic and holistic approach to healthcare[77]. For most of the first century of chiropractic, chiropractors were content in delivering a system of health care based almost exclusively on rationalism and uncontrolled empiricism[58-60]. As evidenced by the recent explosion in the number of controlled studies and publications, the chiropractic profession has recognized the need and importance of outcomes assessments to enhance the quality and effectiveness of chiropractic care as well as to evolve chiropractic standards of care[17,26,43,56,70,100].

The objective of NUCCA chiropractic care is the detection and correction of the vertebral subluxation. The vertebral subluxation not only compromises the function of the spine but also interferes with the function of the nervous system and all related systems. Correction of vertebral subluxations contributes to health by restoring spinal function and eliminating interference to body physiology. Through vertebral subluxation correction, the body has greater adaptive ability.

The earliest days of chiropractic can support the importance of the detection, reduction and correction of the upper cervical subluxation. The National Upper Cervical Chiropractic Association (NUCCA) has had a profound effect o n the understanding of the atlas subluxation complex and its manifestations known as the atlas complex syndrome.

Outcomes assessment of chiropractic care focuses primarily on improved function. Components of the vertebral subluxation are amenable to classical scientific investigation and can serve as a database for most outcomes assessment. The intent of this chapter is to present those outcome measures which serve to assess the patient-chiropractor health care process. The patient-chiropractor relationship represents one segment of the entire framework of chiropractic outcomes assessment. It is understood in this document that components used in the analysis and assessment of the vertebral subluxation also be utilized as outcomes assessment parameters.

Outcomes assessment is a data-driven process which quantifies the quality and effectiveness of fulfilling the objective of the NUCCA chiropractor's practice. Those objectives include measuring the quantifiable changes resulting from vertebral subluxation correction. Outcome objectives also include data on the implications of vertebral subluxation correction on patient health status, i.e., change in regimen.

II. DEFINITIONS

Health: A state of optimal physical, mental, emotional and social well-being, not merely the absence of disease or infirmity[27].

Homeostasis: The tendency to maintain, or the maintenance of, normal, internal stability in an organism by coordinated responses of the organ systems that automatically compensate for changes in the organism[99].

Outcomes Assessment: A procedure or method of objectively measuring a change in patient status over time, primarily to evaluate the effectiveness of fulfilling the objectives of the NUCCA chiropractor's practice.

Reliability/Reproducibility: A concept that reflects the ability of an outcome measure to consistently provide the same value upon repeated measurements of the same phenomenon. Intra and inter-user reliability determinations are assessed.

Responsiveness: The ability of an outcomes measure to detect any significant changes over time. Sensitivity of an outcomes measure to changes resulting from the chiropractic adjustment is determined by empirical study.

Validity: A term that addresses the question of whether the outcome procedure actually measures what it claims to measure. Scientific analyses over a period of time determine the validity and accuracy of a procedure.

III. LIST OF SUBTOPICS

A. Practitioner Objectives

1. Outcomes Assessment Plan
   a. Analysis of Data
   b. Use of Data-Feedback
2. Patient Compliance Assessment

B. Patient-Based Objectives

1. Patient Satisfaction Rating

IV. LITERATURE REVIEW

The National Upper Cervical Chiropractic Association school of thought adheres to the concept that the vertebral subluxation is a cause of nerve traction and enfoldment. This organization promotes chiropractic as a health care profession specializing in the analysis, assessment, and correction of the vertebral subluxation.

The effects and importance of the vertebral subluxation can be divided into three major categories[88]:

1. Immediate local effects which include irritation, inflammation, and degeneration at the vertebral level.
2. Mechanical effects which include aberrations in motion, posture, and overall mechanical function of the spine.
3. Physiologic effects which especially include disturbances in the nervous and circulatory systems.

As a result of the numerous structural and functional studies, these general effects of the vertebral subluxation have been focused into five categories[31,32,50]:

1. Spinal kinesiopathology which generally refers to the abnormal position and motion testing. Outcomes assessment parameters would include palpation analyses[4,5,36,42,48,50,77,85,89]; X-ray analyses[37,38,40,41,88,95]; computed tomography and MRI[16,22,61]; video fluoroscopic analyses[61,97]; range of motion assessment[33,35,68,73,83]; and leg-length check analyses[34,69].
2. Neuropathophysiologic refers to abnormal nervous system function which is the most significant component of the vertebral subluxation[57].

Assessment criteria would include somatic pain, paresthesia, pypesthesia through case history and questionnaire determination, somatic motor assessment through muscle analyses[61], and complete neurologic assessment of the neuraxis as well as complete afferent and efferent assessments[12,13,31,32,63-66]. In addition, MRI and CT scans provide evidence of nerve structural damage, evidence which correlates with the neuopathophysiologic component[10,11,61,84,90]. Visceromotor determinations are made via heat sensitive devices, thermography[10,72,80,93], and thermometry. Additional research and quality assurance studies are needed in this area. Further research on the piezoelectric and pyroelectric effects of bone, and corresponding effects on nerve function, also need further study[2,6,9].

3. Myopathology refers to the abnormal changes in muscle function due to the vertebral subluxation.

Outcomes assessment criteria include palpation[23,36]; dynamometer testing[51]; surface EMG (electromyograph) determinations[7,21,61,96]; neuropressure algometry and pain sensitivity[100]; range of motion determination[73,75]; paraspinal tissue compliance[54]; gait symmetry[49,81,96]; and Cybex of the vertebra involved in the subluxation.

4. Histopathology refers to the abnormal changes to soft tissues involved in the vertebral subluxation[21,32].

Assessment protocols primarily include the determination of disc and ligament integrity by means of X-ray[14,88] and other imaging methods[10,11,28,61].

5. Pathophysiology refers to the generalized abnormal changes generated in the spine and body as a consequence of the vertebral subluxation[55,78].

   Spinal pathophysiology is assessed primarily through radiographic[40,41,62,78,101] to and other imaging determinations of bone degeneration[10,11,28,61,86]. Pathophysiology peripheral to the spine remains the subject of scientific investigation.[32] Continued research into the involvement of the nervous system in modulating immune function will represent a significant outcome measure in the future[82].

   Succinctly stated, the foundation of chiropractic rests on the premise that structural distortion causes interference to normal nerve transmission and may result in the symptoms and tissue changes of disease. The basic chiropractic analysis consists of manual palpation of the bony elements of the spine, manual assessment of the motion of the spine and individual vertebra, and palpation of the numerous muscles which attach and control spine and vertebral motion. Additional analytic tools for the field chiropractor would include X-ray, devices to assess spinal and vertebral motion and posture, as well as instruments used to assess muscle function and skin temperature. Additional research will generate techniques and devices which can effectively assess physiologic dysfunction resulting from the vertebral subluxation. Assessment of vertebral subluxations from this analysis necessitates a choice of adjusting techniques by the chiropractor to safely and effectively correct the vertebral subluxation. A discussion of the various chiropractic adjusting techniques and their effectiveness is outside the scope of this document. However, outcomes assessment for the chiropractor will depend on the specific analysis used to determine the presence of the vertebral subluxation as well as the exact adjustment methodology utilized in correcting the subluxation. Exactness in chiropractic analysis, vertebral subluxation determination, and chiropractic adjustment protocol are essential "it is this exactness of differentiation and specificity of correction that has been stressed by the chiropractic profession and has distinguished if from other health sciences that also use manipulation, mechanical therapy, physical therapy, or similar procedures."

   The most exact criteria, indicative of vertebral subluxations, utilized by the field chiropractor focuses on structural alterations in the spine. Imaging techniques, especially X-ray, provide the most traditional means for assessing these structural changes. Therefore, the most measurable and exact data for outcomes assessment of chiropractic adjustments stem from structural criteria. However, such structural or mechanical faults are not the major criteria constituting the vertebral subluxation. Aberrant physiology, most notable neurophysiology, signifies a critical negative effect of the vertebral subluxation on homeostasis. This altered physiology for which there is no underlying structural pathology has been termed "physiopathology" by What more and Kohlil[98] Functional disorders and functional illness have their origin in such physiopathology. "Signal transmissions in a complex system of neurons and endocrine fluids and signaling factors within this physiologic system are considered basic factors in the etiology of functional disorders[98]." Fries and Crapo[33] emphasize components of practitioner-based outcomes assessment. Schafer[88] has noted that the similarity among chronic diseases is that they all represent gradual long-term breakdown of the body's physiologic functions, a process that begins imperceptibly, long before the first symptoms arise. Outcomes of chiropractic care based on data collected from functional analyses represent less exact means of assessment for the field chiropractor. Improved function, elimination

of functional disorders, quality of life, etc., represent outcomes of chiropractic care best assessed by processes external to the chiropractic-patient relationship, e.g., government agencies, insurance companies, hospital studies, etc. An extensive collection of scientific studies supporting the functional disorders resulting from the vertebral subluxation bas been reviewed elsewhere[15,44-47,88,92].

Least exact methods of outcomes assessment of the chiropractor-patient relationship stem from pain and symptom determinations. Pain and symptoms are not necessary correlates of the vertebral subluxation. However, elimination of the vertebral subluxation and the improved spinal and general physiologic function that that results, may reduce and eliminate patient pain and symptoms. Although associated pain and symptom relief represent the major patient rationale for seeking chiropractic care, an outcome objective of the chiropractor is patient compliance with a cooperative chiropractic health care program which is not pain and symptom related. Patient-based assessment of chiropractic care utilizes questionnaires[24,76]; satisfaction[81,87]; pain ratings such as the Oswestry Pain Questionnaire[52], Dallas and McGill Questionnaires[39,76], Visual-analog scales and general health and performance status assessments by the COOP and SF-36D systems[25,56,76].

A philosophical premise within chiropractic is the vitalistic principle which recognizes that an "innate intelligence" actively organizes and maintains all living things[77,78,91,94]. Vitalism permeated ancient medical writings and was apparent in the works of Hippocrates who believed that a "vital spirit" was responsible for "life" and the "natural self-healing tendency of the body[19]". The vitalistic principle was essentially replaced in the twentieth century by a chemical-mechanistic concept of life in which living things were viewed as machines whose capabilities were constrained to those functions permitted by this model[8,9]. Vitalistic attributes such as autonomy and self-healing do not exist in this model. Becker believes that this paradigm has ruled the allopathic model, "limiting both the methods that could be used to bring about a cure and our perceptions of the ability of the human body to heal itself." The mechanistic paradigm has failed in many ways to prevent disease as well as to cure patients. Dissatisfaction with the mechanistic concept has resulted in a vitalistic resurgence emphasizing proper nutrition, exercises, meditation as well as a "reaffirmation of the innate healing ability of living things[9]".

The philosophy of chiropractic permits an acceptance of a more holistic approach to wellness and recognition of the critical role of the physician within each patient.

The chiropractic profession has recognized the importance of a properly functioning spine to insure homeostases within the nervous system, since it is through the nervous system that the innate self-healing capacity can be expressed. Proper function rather than symptomatic relief is the paradigm of the chiropractic standard of care. Questionnaires and surveys of patient function and quality of life, similar to the SF-36D and COOP charts[56], represent the best means currently available for outcomes assessment of the vitalistic component of chiropractic care. Both the COOP and the SF-36D address health concepts such as functional status, overall health and well-being, and quality of life. Health attributes relating to function include: physical, emotional, role, and social functioning. Pain, overall physical and mental health, health change, vitality and energy, etc., make up the overall health and well-being component.

Quality of life perceptions, social support, and health changes provide measures for a quality of life assessment. These documents can be tailored to individual practices but should have a standardized component for external agency data assessment and evaluation.

V. RECOMMENDATIONS

A. Practitioner Objectives

1. Outcomes Assessment Plan

NUCCA chiropractors shall develop and implement an outcomes assessment plan which will be updated at least once per year. The plan will utilize data from the mechanical and vitalistic components of their patient examination, assessment, and reassessment procedures. This process will generate a quantifiable description of their NUCCA chiropractic care and thereby provide a means to evaluate and improve the quality and effectiveness of their procedures through a process of informational analysis feedback.

a. Analysis of Data

Procedures utilized by the NUCCA chiropractor in the examination, assessment, and reassessment of patient vertebral subluxations will be used to supply data for outcomes assessment. The analysis of the differences among these assessments will illustrate the change in:

1) Patient Status

2) Technical Biomechanical Approach

b. Use of Data-Feedback

The analysis of the data will be used by the NUCCA chiropractor to:

1) Change or continue the chiropractic regimen of patient care.

2) Change or continue the current operational procedures of the office practice.

2. Patient Compliance Assessment

Chiropractic Health Care Assessment: Practitioner based assessment forms and surveys should be utilized which measure patient compliance with chiropractic designed programs, and which measure patient growth in understanding of the components of health and NUCCA chiropractic.

B. Patient-Based Objectives

Patient Satisfaction Rating: Assessment procedures for patient satisfaction are an excellent source of data, within the chiropractor-patient relationship, to clarify the quality and effectiveness of NUCCA chiropractic care. Standardized questionnaires which contain a varied sampling of outcomes measures, such as practitioner communication skills, educational information imparted, attentiveness to patient needs, interest in patient compliance with health care choices, functional and quality of life improvement, etc. should be utilized. These measures should also be used as a source of outcomes data for outside agency evaluation of chiropractic care.

VII. DISCUSSION

Many of the rated measures used to assess the outcomes of NUCCA chiropractic patient care concentrate on the structural components of the vertebral subluxation. However, NUCCA chiropractors recognize the vital importance of a properly functioning spine and nervous system to promote the expression of an individual's self healing capabilities. This concept of improved function through the correction of vertebral subluxation is the NUCCA chiropractic paradigm and the focus of outcomes assessments.

Scientific literature has illuminated the significant relationship between spinal function and neurophysiology. Nerve interference impacts on total body function. The next century promises to provide improved technology for the NUCCA chiropractor to assess aberrations in nerve function resulting from the vertebral subluxation.

A number of chiropractic techniques that address the correction of vertebral subluxation exist within the profession. Such an undertaking could be carried out by the chiropractic colleges or though controlled studies in various large clinical settings.

The continued validation and evaluation of the efficacy of these techniques should be endorsed by the profession in order to provide the best possible methodologies for patient care.

Multilevel outcomes assessment methods will be necessary to insure quality control and effectiveness in future health care delivery systems, including upper cervical chiropractic care.

The significant values derived from any outcomes assessment lie within the processes for data evaluation and implementation of appropriate changes. An ever evolving increase in the quality, effectiveness, and cost efficiency of NUCCA chiropractic care must be realized from the outcomes assessment process. To maximize success in implementing changes in the chiropractor-patient relationship, multilevel outcomes assessments must be generated. Consumer groups, state boards of chiropractic, insurance companies, federal agencies, etc. must engage in outcomes assessment and evaluation within the NUCCA chiropractor-patient framework. Only through this network of assessment and evaluation by all concerned parties can the quality, effectiveness, and cost efficiency of chiropractic care be insured.

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