Heath J. Bills, DC
30 Crossing Lane, Suite 207, Lexington, VA 24450
Phone: 540-464-5800
Fax: 540-795-3097
drheathbills@gmail.com
http://www.chiropsclexington.com

SELECTED OCCUPATIONAL HISTORY

Clinic Director, Chiropractic and Primary Spine Care of Lexington, Lexington, Virginia, 2020 – Present

Associate Doctor, Advanced Wellness Centre, Richmond, Virginia, 2015 – 2020

Clinic Director, Heath Bills Chiropractic, Springfield, Virginia, 2013 – 2015

Associate Doctor, Schreffler Chiropractic, Arlington, Virginia, 2012 – 2013

Clinic Director, Elite Performance Chiropractic, Alexandria, Virginia, 2004 – 2012

Associate Doctor, Karmich Chiropractic, Alexandria, Virginia, 2002 – 2004

Associate Doctor, Tri-County Chiropractic, Fairport, New York, 1999 – 2002

LICENSURE

Doctor of Chiropractic, Licensed in the State of Virginia, License # 0104556004, 2002 – Present

Doctor of Chiropractic, Licensed in the State of New York, 1999 - 2002

EDUCATION

Doctor of Chiropractic, National College of Chiropractic, Lombard, IL, 1999

National Board of Chiropractic Examiners, Part I, 1997

National Board of Chiropractic Examiners, Part II, 1998

National Board of Chiropractic Examiners, Part III, 1998

National Board of Chiropractic Examiners, Physiotherapy, 1998

National Board of Chiropractic Examiners, Part IV, 1999

BS in Human Biology, National College of Chiropractic, Lombard, IL, 1997

AS in Pre-Chiropractic, Human Biology, Monroe Community College, Rochester, NY, 1994

SELECTED POST-GRADUATE CERTIFICATIONS, QUALIFICATIONS AND DIPLOMATES

Primary Spine Care Qualified – Cleveland University, Kansas City, 2022 - Present

Evaluation and Management Qualified – Cleveland University, Kansas City, 2022 - Present

Hospital Based Spine Care Qualified - Cleveland University, Kansas City, 2021 - Present

Trauma Qualified – Cleveland University, Kansas City, 2021 – Present

Certified Chiropractic Extremities Practitioner – Council on Extremity Adjusting, Boise, ID, 2010 – 2021

SELECTED POST-GRADUATE EDUCATION

Chiropractic Diagnosis and Management of Acute Spinal Ligament Injury – *Review of the ligament injury thresholds, methods of diagnosis utilization of SITR pulse Sequence MRI as the gold standard for evaluating the age of and pathophysiology was discussed and presented. Biomechanical assessment of hypermobility associated with ligament laxity was presented along with the specific ligament involved in the clinical picture. When and how to triage to medical specialist was reviewed. Review of the four columns of vertebral architecture was detailed*. PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2022

Medical-Legal Ethical Relationships, Report Writing and Preparing for a Legal Case, *Creating demonstrative evidence, visuals of your patient's bodily injuries inclusive of x-rays, MRI's, CAT Scans and electrodiagnostic findings, the spinal biomechanics of herniated disc with ipsilateral findings and contralateral symptomatology.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, 2022

Medical-Legal Ethical Relationships, Report Writing and Preparing for a Legal Case, *Reviewing the facts of the case inclusive of your documentation, the defense medical examiner, medical specialists and the attorney to ensure accurate and consistent reporting.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, 2022

Medical-Legal Ethical Relationships, A Documentation Relationship Between the Doctor and Lawyer, *The level of organization required in a medical-legal case that accurately reflects the bodily injuries of your patients and the time constraints in rendering an accurate report.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, 2022

Medical-Legal Ethical Relationships, Documentation and Cross Examination Testimony, *Reporting your documentation factually and staying within the 4 corners of your medical report and scope of practice inclusive of understanding how your credentials allow you to report your documentation.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, 2022

Medical-Legal Ethical Relationships, Documentation and Direct Testimony Part 4, *Determining and documenting disabilities and impairments inclusive of loss of enjoyment of life and duties under duress and the evaluation and validation of pain and suffering.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, 2022

Medical-Legal Ethical Relationships, Documentation and Direct Testimony Part 3, *The evaluation, interpretation and reporting of collaborative medical specialists results and concluding an accurate diagnosis inclusive of all findings and reviewing all images to ensure an accurate diagnosis.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, 2022

Medical-Legal Ethical Relationships, Documentation and Direct Testimony Part 2, *Utilizing demonstrative documentation in direct examination and communicating the results of your care concurrently with the written documentation and reporting an accurate diagnosis for all images.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, 2022

Medical-Legal Ethical Relationships, Documentation and Direct Testimony, *Organizing your documentation and understanding all collaborative documentation and how it fits into your diagnosis, prognosis and treatment plan, Understanding the nuances of the functional losses of your patients related to their bodily injuries.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, 2022

Medical-Legal Ethical Relationships, Documentation and Legal Testimony, Part 2, *Understanding report writing and the types of medical reports required for court inclusive of diagnosis, prognosis and treatment plans with requirements of reporting causality and permanency.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, 2022

Medical-Legal Ethical Relationships, Documentation and Legal Testimony, *Report writing for legal cases, the 4 corners of a narrative and documenting damages with understanding defense medical documentation and consistent reporting of bodily injuries.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, 2022

Clinical Grand Rounds – Chiropractic Spine Management and Pain Categorization, *Review of published categorization of pain generation by the International Association for the Study of Pain including nociceptive, neuropathic and nociplastic sources. Discussion on the history and relevance of the Delphi process of conducting consensus-based research was presented.*

Origins of nociceptive, neuropathy and nociplastic sources of pain was outlined including non-neural tissue, the somatosensory nervous system as well as the categorization of pain syndromes with non-specific findings on physical examination and imaging studies. Review of the importance of quantitative testing, clinical examination and clinical correlation was presented and related to the academic approach to the categorization of pain. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, 2022

Clinical Grand Rounds – Chiropractic Professional Liability Litigation, *Discussion of thirty years of jury verdict data was reviewed and presented. Focus was on the rationale for claims against Doctor of Chiropractic and overall decisions rendered by jury pools. Outlining the risk factors associated with overly aggressive treatment, failure to diagnose and lack of interprofessional referral when medical necessary was presented with statistics. Comparison between chiropractic management and surgical management were outlined and detailed. Detailed analysis of causality versus correlation was presented and discussed.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, 2022

Primary Spine Care Qualified, *This qualification includes graduate chiropractic education in healthy and traumatically altered spinal morphology inclusive of osseous, connective tissue and neurological structure, function and pathology. This certifies you are qualified in assessing predictive models in spinal biomechanics and devising engineering paradigms for treatment plans to maximize spinal homeostasis in an evidenced based conclusion. In addition, this qualification acknowledges your expertise in triaging the injured and coordinating collaborative care from the trauma through conclusion of rehabilitation*. Academy of Chiropractic Post-Doctoral Division, Cleveland University, Kansas City, Long Island, NY, 2022

Primary Spine Care 9: Chiropractic as 1st Option for Spine, A Literature-Based Standard - Chiropractic as the First Option for Spine, A literature-Based Standard, *Spinal biomechanical engineering models related to pathobiomechanics and literature-based standards in creating an accurate diagnosis, prognosis, and treatment plan. Determining impairment ratings based upon alteration of motion segment integrity utilizing motion-imaging, and creating demonstrable evidence for continued treatment plans* . PACE Approved for the Federation of Chiropractic Licensing Board, Cleveland University, Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2022

Primary Spine Care 9: Chiropractic as 1st Option for Spine, A Literature-Based Standard - Chiropractic as the First Option for Spine, A literature-Based Standard, *Creating literature-based documentation inclusive of history and a clinical examination that encompasses causality, diagnosis, prognosis and treatment plans. Ensuring the whole person impairment ratings are consistent with contemporary literature* . PACE Approved for the Federation of Chiropractic Licensing Board, Cleveland University, Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2022

Primary Spine Care 9: Chiropractic as 1st Option for Spine, A Literature-Based Standard - Chiropractic as the First Option for Spine, A literature-Based Standard, *Managing spinal related cases based upon MRI findings of herniations, bulges, protrusion, extrusions (comminuted and fragmented) utilizing thin-sliced acquisition protocols. When to consider ordering T1, T2, Short Tau Inversion Radiant, proton density and Dixon sequencing for spinal related pathology.* PACE Approved for the Federation of Chiropractic Licensing Board, Cleveland University, Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2022

Primary Spine Care 9: Chiropractic as 1st Option for Spine, A Literature-Based Standard - Chiropractic as the First Option for Spine, A literature-Based Standard, *Utilizing clinical findings in conjunction with advanced imaging and electrodiagnostic findings in managing collaborative relationships with medical specialists. Applying a literature standard to care to ensure conservative care as the first option.* PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2022

Primary Spine Care 7: Spinal Biomechanical Pathology & Collaborative Management - Documentation in a Medical - Legal and Insurances, *Constructing and concluding an E&M (99202-99205) report that accurately reflects the history, clinical findings and management of trauma cases that concurrently meets the needs of both the carriers in the courts and ethical relationship that concurrently matches the standards of both contemporary academia requirements and a contemporary literature-based standard.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2022

Primary Spine Care 7: Spinal Biomechanical Pathology & Collaborative Management - Ethics and Medical Collaboration, *Having referral relationships with emergency rooms, neurosurgeons, orthopedic surgeons, pain management specialists, neurologists, neuroradiologist and medical primary care providers based upon clinical dilemmas that processed after a thorough history, examination and imaging if clinically indicated to conclude diagnostic dilemmas. Utilizing evidence-based protocols and acquisition of images and treatment pathways, collaborating with medical specialists and primaries to conclude and accurate treatment plan.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2022

Primary Spine Care 7: Spinal Biomechanical Pathology & Collaborative Management - MRI Spine Interpretation and Protocols, *Contemporary acquisition protocols including slice thicknesses and sequences inclusive of the ordering process. Interpretation of axial, sagittal and coronal views in T1, T2 and STIR views inclusive of the disc, spinal cord, extra-dural and intra-dural pathology* . PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2022

Primary Spine Care 7: Spinal Biomechanical Pathology & Collaborative Management - Documentation in Medical Collaborative Cases, *Concluding an E&M report in cases involving medical primary care providers of medical specialists that have complicated case histories,*

significant risk factors, and inconclusive findings. Triage and management of complicated cases requiring the clinical evaluation, advanced imaging and electrodiagnostics . PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2022

Primary Spine Care 05: Biomechanics, Neurology of the Chiropractic Spinal Adjustment & Documentation in Collaborative Relationships - Evidence Based Care in a Collaborative Setting, *A literature-based model for collaborating with hospitals, medical primary care providers and specialists. Reviewing the documentation requirements to communicate the diagnosis, prognosis and treatment plans with medical entities and having the evidence as a basis for those recommendations.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2022

Primary Spine Care 05: Biomechanics, Neurology of the Chiropractic Spinal Adjustment & Documentation in Collaborative Relationships - Current Literature Standards of MRI Spine Interpretation, *MRI Spine Interpretation. How to triage a trauma and non-trauma patient with advanced imaging and document the necessity. Covering the basics of MRI Spine Interpretation inclusive of all types of herniations and bulges.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2022

Primary Spine Care 05: Biomechanics, Neurology of the Chiropractic Spinal Adjustment & Documentation in Collaborative Relationships - Spine Brain Connection in Pain Pathways, *MRI Spine - The spine-brain connection in managing chronic pain patients. Understanding how chronic pain negatively affects brain morphology and potential pathology sequella. The role of chiropractic in preventing the loss of gray matter and the most recent evidence as outlined in index peer reviewed literature over the last 10-years verifying chiropractic's role.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2022

Primary Spine Care 05: Biomechanics, Neurology of the Chiropractic Spinal Adjustment & Documentation in Collaborative Relationships - Bio-Neural-Mechanical Mechanism of the Chiropractic Spinal Adjustment, *The biological, neurological, and mechanical mechanisms and pathways from the thrust to the dorsal horn and brain connection and how the brain processes the chiropractic spinal adjustment based upon the literature. Care paths of chiropractic and physical therapy from an outcome basis.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2022

Primary Spine Care 12 - Neurosurgical Grand Rounds, *A clinical discussion of collaborating with neurosurgeons on spinal cord and spinal nerve root co-morbidities. Triaging cases with herniated, protruded, extruded, fragmented discs and differentially diagnosing tethered cord, syringomyelia, traumatic Schmorl's nodes, myelomalacia, spinal cord edema, vacuum disc and other intra- and extra-dural lesions.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Primary Spine Care 12 - Clinical Grand Rounds in Spinal Biomechanics, *Case reviews utilizing E/M, MRI, and x-ray mensuration report to conclude an accurate diagnosis, prognosis, and treatment plan. Common diagnosis requiring interprofessional collaboration with a discussion of diagnostic dilemmas and proper communication methods.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Primary Spine Care 12 - Age-Dating Herniated Discs and Trauma, *Age dating herniated discs and trauma is a critical skill for an expert in spine. It combines the clinical skills of interpreting x-ray, MRI, and other imaging modalities with a clinician's understanding of joint pathology. This level of expertise is critical when collaborated with other physicians or working in the medical-legal environment as an expert. Age dating pathology is also central to creating a prognosis on your patient's recovery and must be evidence-based in rationale.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Primary Spine Care 12 - Stroke Evaluation and Risk Factors in Chiropractic Practice, *Diagnosing, triaging, and documenting headaches, migraines, and vascular incidents (stroke) in the primary provider's office. Imaging protocols based upon history and clinical presentation will be presented, along with analyzing imaging findings in determining the etiology. There will be an extensive question and answer session following the instructional presentation.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Primary Spine Care 12 - Ligament/Connective Tissue Physiology and Pathology*, Master-Class in ligaments: anatomy, physiology, vascularization, neurological innervation, tissue repair and how they all relate to clinical practice. Ligament pathology correlating to the mechanisms of patho-neuro-biomechanical lesions (vertebral subluxation complex). Also, how ligaments play a critical role in the chiropractic spinal adjustment and in defining the chiropractic spinal adjustment mechanisms.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Primary Spine Care 12 - MSK Extremity Radiological Interpretation*, Utilizing both MRI and x-ray in identifying via x-ray and advanced imaging extremity instabilities from ligamentous, osseous, or neoplastic derangement.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Primary Spine Care 12 - Chiropractic vs. Physical Therapy vs. Medical Case Management and Outcomes, *Analyzing evidence-based outcomes in triaging non-anatomical lesions. The analysis of neuro-biomechanical pathological lesions defines primary spinal lesions and removes the dogma of non-specific back pain. Managing collaborative relationships with medical primary providers and specialists in clinical practice.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Primary Spine Care 12 - MRI Spine Clinical Case Grand Rounds, *Clinical case review of MRI's including sagittal, axial, T1, T2, STIR, and proton density sequences. Identified will be the*

vertebrae, spinal cord, discs, nerve roots, thecal sac, posterior longitudinal ligament, epidural veins, and fat saturation pulses. Pathology will include bulges, herniations, protrusions, extrusions, myelomalacia, cord edema, and Schmorl's nodes. Learn how to collaborate effectively with radiologists, neuroradiologists, and neurosurgeons on the clinical findings. PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Primary Spine Care 12 - 2022 Trends in Spinal Healthcare, *Analyzing evidence-based spinal healthcare trends in both utilization and necessity and understanding the marketplace. The use of evidence-based demonstrative documentation in reporting treatment pathways in triaging spinal pathobiomechanics.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Medical-Legal-Insurance Documentation, *Accurate and compliant documentation of history and clinical findings inclusive of functional losses, loss of activities of daily living, duties under duress and permanent loss of enjoyment of life. Prognosing static vs. stable care, gaps in care both in the onset and in the middle of passive care with a focus on detailed diagnosing. The integration of chiropractic academia, the court system, and the insurance reimbursor's requirements for complete documentation.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Documentation Made Easy, *Documentation, Demonstrative and Compliance, Elements of Evaluation and Management codes 99202 - 99203 - 99204 - 99205, inclusive of complexity of management and time components. Demonstrative documentation of spinal-related pain generators; spinal cord, thecal sac, myelomalacia, spinal nerve root insult, connective tissue, and recurrent meningeal nerves.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Evaluation and Management: Case Management and Treatment Orders, *This module discusses how to document a clinically determined treatment plan inclusive of both manual and adjunctive therapies. It discusses how to document both short-term and long-term goals as well as referring out for collaborative care and/or diagnostic testing. It also includes how to prognose your patient and determine when MMI (Maximum Medical Improvement) has been attained.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Evaluation and Management: Documenting Visit Encounters, *Forensically detailing S.O.A.P. note process for visit encounters and discussing the necessity for clinically correlating symptoms, clinical findings and diagnosis with the area(s) treated. It also details how to modify treatment plans, diagnosis, document collaborative care and introduce test findings between evaluations.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Evaluation and Management: Neurological Evaluation, *Reviewing a complete motor and sensory evaluation, inclusive of reflex arcs, with an explanation of Wexler Scales in both the upper and lower extremities. The course breaks down testing for upper and lower motor neuron lesions*

along with upper and lower extremity motor and sensory testing examinations. PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Evaluation and Management: Coding and Spinal Examination, *Detailing 99202 - 99205 and 99212 - 99215 inclusive of the required elements for complaint billing. This course reviews the elements for an extensive review of systems, cervical and lumbar anatomy, and basic testing. The course also covers the basics of vertebra-basilar circulation orthopedic testing.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Evaluation and Management: Concluding a Chief Complaint, History and What Needs to be Considered in a Physical Examination, *This covers in-depth the required elements for a chief complaint, history of present illness, review of systems, and past, family and/or social history. This module also covers the following components of a physical examination: Observation, palpation, percussion, and auscultation.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Evaluation and Management, *An overview of the evaluation and management process inclusive of utilizing electronic medical records to conclude evidence-based conclusions with the utilization of macros. The importance of adhering to an academic standard and considering co-morbidities.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Hospital Based Spine Care Qualified, *Credentialed in hospital protocols, emergency room protocols, acute and chronic patient triage inclusive of MRI spine interpretation, spinal biomechanical engineering, head trauma, concussion, mild traumatic and traumatic brain injuries. Co-credentialed through the ACCME (Accreditation Council for Continuing Medical Education), Cleveland University – Kansas City and the Academy of Chiropractic* Co-credentialed through the ACCME (Accreditation Council for Continuing Medical Education), Cleveland University - Kansas City and the Academy of Chiropractic, Long Island, NY, 2021

Clinical Grand Rounds - Aberrant Spinal Motion and Degenerative Disc Disease, *Research analysis of mechanical factors as etiology of intervertebral disc degeneration. Review of spinal tissue mechanics and their relation to mechanical stress was discussed and corelated to abnormal changes in the structure and composition of the intervertebral disc. Detailed discussion of ingrowth of pain transmitting nerve fibers into degenerative intervertebral discs and their relationship to acute and chronic pain was presented. Clinical correlation between congenital malformations of the spine, including scoliosis, kyphosis, spina bifida, spondylolysis and Klippel Feil syndrome, accidental back injury or ligament injury, occupational exposure causing aberrant mechanical loading of lumbar spine, and intervertebral disc degeneration visible on T1, T2 and STIR MRI, sagittal and axial sequences was presented.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, 2021

Clinical Grand Rounds - Types of Annular Fissures on Advanced and Plain Film Imaging, *Detailed review of the structure and function of the human intervertebral disc was presented including annulus fibrosis, nucleus pulposus, cartilaginous endplate and sharpey's fibers. Diagrams as well as MRI images were outlined and reviewed in both the cervical and the lumbar spines with particular focus on the difference between degenerative and traumatically induced changes. High intensity zone (HIZ) as a characteristic of injury to the posterior aspect of the annulus fibrosis best visualized on T1 sagittal MRI images. Detailed comparison of axial and sagittal T1, T2 and STIR images were outlined, discussed, and reviewed.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, 2021

Clinical Grand Rounds - Prevalence of Spinal Degeneration, *Discussion of the clinical occurrence of spinal degenerative conditions such as Diffuse Skeletal Hyperostosis (DISH), central stenosis, foraminal stenosis, degenerative disc disease and osteoporosis was presented. Advanced imaging and plain film radiological utilization in the diagnosis of spinal degeneration was outlined and reviewed. Acute versus degenerative conditions in the spine were reviewed and detailed in relation to traumatic and non-traumatic events. Consensus driven parameters in the identification and rating of degenerative change severity was discussed.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, 2021

Clinical Grand Rounds - Chiropractic Professional Liability Litigation, *Discussion of thirty years of jury verdict data was reviewed and presented. Focus was on the rationale for claims against Doctor of Chiropractic and overall decisions rendered by jury pools. Outlining the risk factors associated with overly aggressive treatment, failure to diagnose and lack of interprofessional referral when medical necessity was presented with statistics. Comparison between chiropractic management and surgical management were outlined and detailed. Detailed analysis of causality versus correlation was presented and discussed.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, 2021

Clinical Grand Rounds - Biomechanical Analysis in Patient Crash Injuries, *Detailed review of the difference between biomechanical and biomedical analysis of injuries was presented. Outline of necessity of the use of properly credentialed biomechanical and crash investigation professionals in the diagnosis, management, and reporting of crash injuries. Review of specific research related to forces during Activities of Daily Living and those sustained in a crash were presented. Details of a proper biomechanical analysis were discussed and specific review of a biomedical report omitting the mathematical calculations needed to determine force and injury potential was presented. Additional review of methods needed to determine expertise of the biomechanist, or accident investigation was discussed.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, 2021

Clinical Grand Rounds - Advanced Imaging Upper Cervical Spine and Documentation, *Discussion, and review of ligament injury in the upper cervical spine. Focus*

was on missed diagnosis due to a lack of imaging and interprofessional communication. Discussion of upper cervical anatomy including occipital condyles, C1/C2 articulation in both MRI, plain film and CT scanning was presented using imaging slides. Clinical documentation was reviewed with particular attention paid to clinical documentation errors from other providers. Discussion on case management and interprofessional communication to correct documentation errors was emphasized. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, 2021

Clinical Grand Rounds - Facet Joint Thresholds and Alteration of Motion Segment Integrity, *Discussion of the predominant mode of joint loading of the cervical facet joints during whiplash injury related to retraction tension on the facet joint capsule. Review of shear forces, translation of the inferior and superior facet joint as well as injury risk due to excessive stretching of spinal ligaments was presented. Overview and discussion of mechanical trauma to ligament tissue and subsequent microstructural damage not visibly detected was outlined. Threshold for microstructural changes during retraction, reduced ligament stiffness and unrecovered strain was discussed in detail. Individual response to facet joint capsule response supported in the medical literature was presented.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, 2021

Clinical Grand Rounds - Mechanical Response of Damaged Human Cervical Spine Ligaments, *Discussion of the biomechanical properties of cervical spinal ligaments under sub-failure loads. Ligaments discussed were the Anterior Longitudinal Ligament, Posterior Longitudinal ligament, and the Ligamentum Flavum. Deformations exceeding physiological limitations were presented and reviewed. Grade I and Grade II injuries were outlined and discussed. Presentation included observed ligamentous injury significantly compromising ligament ability to give tensile support within physiological spinal motion. Findings were clinically correlated to long term sequalae in Alteration of Motion Segment Integrity and the AMA Guides to the Evaluation of Permanent Impairment 5th and 6th Editions.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, 2021

Clinical Grand Rounds - Differentiating Degenerative vs Traumatic Cervical Spondylolisthesis, *Outline of spondylolisthesis clinical work up in the presence of spine pain including plain film dynamic radiographs, regional MRI study and assessment of alteration of motion segment integrity of specific spinal segments. Review of the correlation of present segmental degenerative changes such as loss of disc height, osteophyte formation, ligament ossification and facet joint hypertrophy and its association to pre-existing spondylosis was presented. Detailed discussion of past and present medical history including past traumatic events was emphasized.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, 2021

Clinical Grand Rounds - Biomechanical Compensation and Intervertebral Disc Extrusion, *Detailed review of MRI documented lumbar disc extrusion measuring 12 mm including STIR, T1 and T2 sagittal and axial images. Presentation of radiographic biomechanical analysis outlining sagittal alignment and vertebral body rotations. Discussion of co-management of spinal pathology while considering both the biomechanical and anatomical components of spine pain. Radiographic review included lateral neutral, lateral flexion, lateral extension, and AP views. Clinical correlation and discussion of pre- and post-surgical care was outlined.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, 2021

Clinical Grand Rounds - Nomenclature and Morphology of Intervertebral Disc Pathology, *Updated review and demonstration of intervertebral disc nomenclature related to intervertebral disc degeneration, trauma and other pathology. Specific attention paid to the agreed upon nomenclature between the Combined Task Forces of the North American Spine Society, American Spine Society, American Society of Spine Radiology and American Society of Neuroradiology. Details were provided in comparison to intervertebral disc herniation and intervertebral disc degeneration. Radial fissures were reviewed and outlined including circumferential, transverse, and radial pathology and its anatomical relation to the intervertebral disc.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, 2021

Interprofessional Hospital Based Spine Care, *Trends in hospital and emergent care in the healthcare delivery system inclusive of policies, hospital staffing and current care paths for mechanical spine issues.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Primary Spine Care 11 - Trends in Spinal Healthcare, *Analyzing spinal healthcare trends in both utilization and necessity, and understanding the marketplace and how a clinical excellence level is reflected in a doctors' documentation and credentials. Treatment pathways in triaging spinal pathobiomechanics.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Primary Spine Care 11 - MRI Spine Interpretation: Advanced Diagnosis, *An evidence-based understanding of time-related etiology of disc pathology considering the American Society of Neuroradiology's designation of protrusion, extrusion, and sequestration of spinal discs, T1, T2, STIR and Proton-Density weighted evaluation to diagnose from MRI accurately.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Primary Spine Care 11 - Spinal Biomechanical Engineering and Case Management, *Utilizing spinal mensurating algorithms to conclude a pathobiomechanical vs. normal spine in the absence of anatomical pathology. Clinically correlating a history and physical examination findings to x-ray biomechanical results in creating an accurate diagnosis, prognosis, and*

treatment plan. PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Primary Spine Care 11 - MSK Extremity Radiological Interpretation, *Utilizing both MRI and x-ray to diagnose 1) Arthritis - Inflammatory and Degenerative, 2) Advanced cartilage assessment, 3) Rotator Cuff tears, 4) Labral tears (shoulder and hip), 5) Tendon injuries and degeneration, 6) Meniscal tears, 7) Ligamentous injuries, 8) Common fractures, 9) Sports-related injury patterns, 10) Plantar fasciitis.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Primary Spine Care 11 - Demonstrative Medical-Legal Documentation, *The narrative report: How to effectively create medical-legal documentation and what the courts look for. Making your "4-Corner" (narrative) report demonstrable and build a reputation as an evidence-based provider.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Primary Spine Care 11 - Managing Non-Anatomical Spine Pain, *Treatment modalities centered upon "best-outcomes" in an evidence-based model considering chiropractic vs. physical therapy and chiropractic vs. medicine. Considerations of disability, pain reduction, functional improvement, drugs utilized, and side-effects are all considered.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Spinal Pathology and Documentation - Documentation and Coding, *CPT coding guidelines for initial and established patients with particular attention paid to patient history, review of systems, social and family history, physical examination, and medical decision making. Specific differences in coding levels and required elements for a 99202-99203-99204-99205, and a 99212-99213-99214-99215.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Spinal Pathology and Documentation - Demonstrative Documentation and Ethical Relationships, *Pathways to improve coordination of care, and interprofessional communication with collaborating physicians. Maintaining ethical relationships in the medical-legal community through documentation and communication of demonstrable diagnosis, prognosis, and treatment plans.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Spinal Pathology and Documentation - MRI Spine Interpretation, Clinical Case Review of MRI's Including Sagittal, Axial, T1, T2, STIR and Proton Density Sequences, *Identified will be the vertebrae, spinal cord, discs, nerve roots, thecal sac, posterior longitudinal ligament, epidural veins and fat saturation pulses. Pathology will include bulges, herniations, protrusions, extrusions, myelomalacia, cord edema, and Schmorl's nodes* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Spinal Pathology and Documentation - Spinal Biomechanical Engineering Clinical Grand Rounds, *Case reviews utilizing E/M, MRI, and x-ray mensuration report to conclude an accurate diagnosis, prognosis, and treatment plan. Common diagnoses requiring interprofessional collaboration with a discussion of diagnostic dilemmas and proper communication methods.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Electrodiagnostics - Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis and Interpretation: Anatomy and Physiology of Electrodiagnostics, *An in-depth review of basic neuro-anatomy and physiology, dermatomes, and myotomes, to both the upper and lower extremities and the neurophysiology of axons and dendrites along with the myelin and function of saltatory conduction. The sodium and potassium pump's function in action potential.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Electrodiagnostics - Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis and Interpretation: Nerve Conduction Velocity (NVC) Part 1, *Nerve conduction velocity testing, the equipment required and the specifics of motor and sensory testing. This section covers the motor and sensory NCV procedures and interpretation including latency, amplitude (CMAP) physiology and interpretation including the understanding of the various nuances of the wave forms.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Electrodiagnostics - Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis and Interpretation: Nerve Conduction Velocity (NVC) Part 2, *Compound motor action potentials (CMAP) and sensory nerve action potentials (SNAP) testing and interpretation including the analysis and diagnosis of the wave forms. It also covers compressive neuropathies of the median, ulnar and posterior tibial nerves; known as carpal tunnel, cubital tunnel, and tarsal tunnel syndromes. This section offers interpretation algorithms to help understand the neurodiagnostic conclusions.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Electrodiagnostics - Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis and Interpretation: Needle Electromyogram (EMG) Studies, *The EMG process, inclusive of how the test is performed and the steps required in planning an electromyographic study. This covers the spontaneous activity of a motor unit action potential, positive sharp waves, and fibrillations. The insertional activity (both normal and abnormal), recruitment activity in a broad polyphasic presentation and satellite potentials. This covers the diagnosing of patterns of motor unit abnormalities including neuropathic demyelinated neuropathies along with acute myopathic neuropathies. This section covers the ruling out of false positive and false negative results.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Electrodiagnostics - Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis and Interpretation: Overview of EMG and NCV Procedures, Results, Diagnoses and

Documentation, *The clinical incorporation of electrodiagnostic studies as part of a care plan where neuropathology is suspected. It also covers how to use electrodiagnostics in a collaborative environment between the chiropractor as the primary spine care provider and the surgeon, when clinically indicated. This section covers sample cases and help conclude an accurate treatment plan based upon electro-neurodiagnostic findings when clinically indicated.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Concussion and Traumatic Brain Injury - Traumatic Brain Injury and Concussion Overview, *This section is an in-depth overview of traumatic brain injury in concussion. It discusses that all brain injuries are traumatic and dispels the myth of a "mild traumatic brain injury." Also, this covers triage protocols and the potential sequela with traumatic brain injuries.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Concussion and Traumatic Brain Injury - Head Trauma and Traumatic Brain Injury Part 1, *This section discusses gross traumatic brain injuries from trauma and significant bleeding with both epidural and subdural hematomas. There are numerous case studies reviewed inclusive of neurosurgical intervention and post-surgical outcomes.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Concussion and Traumatic Brain Injury - Head Trauma and Traumatic Brain Injury Part 2, *This section continues with multiple case studies of gross traumatic brain injuries from trauma requiring neurosurgical intervention and also discusses recovery sequela based upon the significance of brain trauma. This module also concludes with concussion protocols in traumatic brain injury short of demonstrable bleeding on advanced imaging.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Concussion and Traumatic Brain Injury - Concussion and Electroencephalogram Testing, *This section covers concussion etiology and cognitive sequela where gross bleeding has not been identified on advanced imaging. It discusses the significance of electroencephalogram testing in determining brain function and pathology (if present). This module also covers the understanding of waveforms in electroencephalogram testing in both normal and abnormal scenarios.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Concussion and Traumatic Brain Injury - Concussion and Electroencephalogram Testing - Pathological Results, *This module covers amplitude, conduction and conduction delays as sequela to traumatic brain injury to diagnose concussion and traumatic brain injury in the absence of gross bleeding and advanced imaging. This section covers electroencephalograms and event-related potentials which measures the brain response that is a direct result of specific sensory or motor events. It is a stereotype electrophysiological response to a stimulus and provides a noninvasive means of evaluating brain function. In this module multiple case studies*

are discussed with ensuing triage protocols pending the results. PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Neurology of Ligament Pathology - Normal Morphology and Tissue Damage, *Connective tissue morphology, embryology, and wound repair as sequalae to trauma. Full components of sprain-strain models and permanency implications with wound repair and osseous aberration with aberrant structural integrity.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Neurology of Ligament Pathology - Spinal Biomechanics and Disc Pathology, *Disc pathology as sequella to trauma; herniation, extrusion, protrusion, sequestration and how the spinal unit as one system creates homeostasis to balance pathology.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Neurology of Ligament Pathology - Neurological Innervation, *The peripheral and central innervation of the disc and spinal ligaments of the dorsal root ganglion, spinal thalamic tracts, periaqueductal gray areas innervating the thalamus and multiple regions of the brain. The efferent neurological distribution to disparate areas of the spine to create homeostasis until tetanus ensues creating osseous changes under the effects of Wolff's Law.* Council on Extremity Adjusting, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Stroke - Anatomy and Physiology: Brain Vascular Anatomy, *The anatomy and physiology of the brain and how blood perfusion effects brain function. A detailed analysis of the blood supply to the brain and the physiology of ischemia.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Stroke - Anatomy and Physiology: Stroke Types and Blood Flow, *Various types of stroke identifying ischemia, hypoperfusion, infarct and penumbra zones and emboli. Cardiac etiologies and clinical features as precursor to stroke with associated paradoxical emboli and thrombotic etiologies. Historical and co-morbidities that have etiology in stroke inclusive of diabetes, coagulopathy, acquired and hereditary deficiencies.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Stroke - Principles of Treatment: An Overview for the Primary Care Provider, *Stroke type and treatments performed by vascular specialists. The goals of treatment with the physiology of the infarct and penumbra zones and the role of immediate triage in the primary care setting. Detailing the complications of stroke and future care in the chiropractic, primary care, or manual medicine clinical setting.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs

School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Stroke - Clinical Evaluation and Protocols for Identifying Stroke Risk, *The neurological history and examination for identifying stroke risks with a focus on supra and infratentorial regions, upper and lower motor lesions, cranial nerve signs, spinal cord pathology, motor and sensory pathology and gait abnormalities. Examining genetic and family histories along with dissection risk factors. Stroke orthopedic testing and clinical guidelines pertaining to triage for the primary care provider.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Impairment Rating, *The understanding and utilization of the protocols and parameters of the AMA Guide to the Evaluation of Permanent Impairment 6th Edition. Spine, neurological sequelae, migraine, sexual dysfunction, sleep and arousal disorders, station and gait disorders and consciousness are detailed for impairment rating. Herniated discs, radiculopathy, fracture, dislocation, and functional loss are also detailed in relation to impairment ratings.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Accident Reconstruction: Terms, Concepts and Definitions, *The forces in physics that prevail in accidents to cause bodily injury. Quantifying the force coefficients of vehicle mass and force vectors that can be translated to the occupant and subsequently cause serious injury.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Accident Reconstruction: Causality, Bodily Injury, Negative Acceleration Forces, Crumple Zones and Critical Documentation, *Factors that cause negative acceleration to zero and the subsequent forces created for the vehicle that get translated to the occupant. Understanding critical documentation of hospitals, ambulance reports, doctors, and the legal profession in reconstructing an accident.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Accident Reconstruction: Skid Marks, Time, Distance, Velocity, Speed Formulas and Road Surfaces, *The mathematical calculations necessary utilizing time, distance, speed, coefficients of friction and acceleration in reconstructing an accident. The application of the critical documentation acquired from an accident site.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Accident Reconstruction: Research, Causality and Bodily Injury, *Delta V issues correlated to injury and mortality, side impact crashes and severity of injuries, event data recorder reports correlated to injury, frontal impact kinematics, crash injury metrics with many variables and inquiries related to head restraints.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Orthopedic Testing: Principles, Clinical Application and Triage, *Integration of orthopedic testing in the clinical setting to develop a differential diagnosis. Utilizing radiographic and advanced imaging inclusive of MRI and CAT scan findings to verify tissue pathology suspected by orthopedic testing conclusions and developing a treatment plan as sequelae.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Orthopedic Testing: Cervical Spine – Part 1, *Integration of cervical orthopedic testing in the clinical setting to develop a differential diagnosis. Utilizing radiographic and advanced imaging inclusive of MRI and CAT scan finding to verify tissue pathology suspected by orthopedic testing conclusions and developing a treatment plan as sequelae.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Orthopedic Testing: Cervical Spine – Part 2, *Integration of cervical orthopedic testing in the clinical setting to develop a differential diagnosis. Utilizing radiographic and advanced imaging inclusive of MRI and CAT scan finding to verify tissue pathology suspected by orthopedic testing conclusions and developing a treatment plan as sequelae.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Orthopedic Testing: Lumbar Spine, *Integration of lumbar orthopedic testing in the clinical setting to develop a differential diagnosis. Utilizing radiographic and advanced imaging inclusive of MRI and CAT scan findings to verify tissue pathology suspected by orthopedic testing conclusions and developing a treatment plan as sequelae.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Orthopedic Testing: Clinical Grand Rounds, *How to integrate orthopedic testing in the clinical setting utilizing both simple and complex patient scenarios. It includes potential stroke, or vertebrobasilar insufficient patients and understanding the nuances in a clinical evaluation with orthopedic testing as a critical part of the evaluation and screening process.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Spinal Trauma Pathology, Triage and Connective Tissue Injuries and Wound Repair, *Triaging the injured and differentially diagnosing both the primary and secondary complaints. Connective tissue injuries and wound repair morphology focusing on the aberrant tissue replacement and permanency prognosis potential.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs

School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Spinal Trauma Pathology, Ligament Anatomy and Injury Research and Spinal Kinematics, *Spinal ligamentous anatomy and research focusing on wound repair, future negative sequellae of abnormal tissue replacement and the resultant aberrant kinematics and spinal biomechanics of the spine.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Spinal Trauma Pathology, Spinal Biomechanics, Central Nervous System and Spinal Disc Nomenclature, *The application of spinal biomechanical engineering models in trauma and the negative sequellae it has on the central nervous system inclusive of the lateral horn, periaqueductal grey matter, thalamus and cortices involvement.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Spinal Trauma Pathology, Biomechanics of Traumatic Disc Bulge and Age Dating Herniated Disc Pathology, *The biomechanics of traumatic disc bulges as sequellae from trauma and the comorbidity of ligamentous pathology. Age-dating spinal disc pathology in accordance with Wolff's Law.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Spinal Trauma Pathology, Clinical Grand Rounds, *The review of case histories of mechanical spine pathology and biomechanical failures inclusive of case histories, clinical findings and x-ray and advanced imaging studies. Assessing comorbidities in the triage and prognosis of the injured.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Spinal Trauma Pathology, Research Perspectives, *The review of current literature standards in spinal trauma pathology and documentation review of biomechanical failure, ligamentous failure, and age-dating disc pathology.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Spinal Biomechanical Engineering: Cartesian System, *The Cartesian Coordinate System from the history to the application in the human body. Explanation of the x, y and z axes in both translation and rotations (thetas) and how they are applicable to human biomechanics.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Spinal Biomechanical Engineering: Cervical Pathobiomechanics, *Spinal biomechanical engineering of the cervical and upper thoracic spine. This includes the normal and pathobiomechanical movement of both the anterior and posterior motor units and normal function and relationship of the intrinsic musculature to those motor units. Nomenclature in reporting normal and pathobiomechanical findings of the spine.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Spinal Biomechanical Engineering: Lumbar Pathobiomechanics, *Spinal biomechanical engineering of the lumbar spine. This includes the normal and pathobiomechanical movement of both the anterior and posterior motor units and normal function and relationship of the intrinsic musculature to those motor units. Nomenclature in reporting normal and pathobiomechanical findings of the spine.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Spinal Biomechanics in Trauma, *To utilize whiplash associated disorders in various vectors of impact and whiplash mechanisms in determining pathobiomechanics. To clinically correlate annular tears, disc herniations, fractures, ligament pathology and spinal segmental instability as sequellae to pathobiomechanics from trauma. The utilization of digital motion x-ray in diagnosing normal versus abnormal facet motion along with case studies to understand the clinical application.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Spinal Biomechanical Engineering & Organizational Analysis, *Integrating spinal biomechanics and pathobiomechanics through digitized analysis. The comparison of organized versus disorganized compensation with regional and global compensation. Correlation of the vestibular, occular and proprioceptive neurological integration in the righting reflex as evidenced in imaging. Digital and numerical algorithm in analyzing a spine.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Spinal Biomechanical Engineering: Cervical Digital Analysis, *Digitizing and analyzing the cervical spine in neutral, flexion and extension views to diagnose pathobiomechanics. This includes alteration of motion segment integrity (AOMSI) in both angular and translational movement. Ligament instability/failure/pathology are identified all using numerical values and models. Review of case studies to analyze pathobiomechanics using a computerized/numerical algorithm.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Spinal Biomechanical Engineering: Lumbar Digital Analysis, *Digitizing and analyzing the lumbar spine images to diagnose pathobiomechanics. This includes anterior and posterior vertebral body elements in rotational analysis with neutral, left and right lateral bending in conjunction with gate analysis. Ligament instability/failure/pathology is identified all using numerical values and models. Review of case studies for analysis of pathobiomechanics using a computerized/numerical algorithm along with corrective guidelines.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Spinal Biomechanical Engineering: Full Spine Digital Analysis, *Digitizing and analyzing the full spine images to diagnose pathobiomechanics as sequellae to trauma in relation to ligamentous failure and disc and vertebral pathology as sequellae. This includes anterior and posterior vertebral body elements in rotational analysis with neutral, left and right lateral bending in conjunction with gait analysis. Ligament instability/failure/pathology is identified all using numerical values and models. Review of case studies for analysis and pathobiomechanics using computerized/numerical algorithm along with corrective guidelines.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

MRI History and Physics, *MRI history and physics, magnetic fields, T1 and T2 relaxations, nuclear spins, phrase encoding, spin echo, T1 and T2 contrast, magnetic properties of metals and the historical perspective of the creation of NMR and MRI.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

MRI Spinal Anatomy and Protocols, *MRI spinal anatomy and protocols, normal anatomy of axial and sagittal views utilizing T1, T2, 3D gradient and STIR sequences of imaging. Standardized and desired protocols in views and sequencing of MRI examination to create an accurate diagnosis in MRI.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

MRI Disc Pathology and Spinal Stenosis, *MRI disc pathology and spinal stenosis, MRI interpretation of bulged, herniated, protruded, extruded, sequestered, and fragmented disc pathologies in etiology and neurological sequelae in relationship to the spinal cord and spinal nerve roots.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

MRI Spinal Pathology, *MRI spinal pathology, MRI interpretation of bone, intradural, extradural, cord and neural sleeve lesions. Tuberculosis, drop lesions, metastasis, ependymoma,*

schwannoma, and numerous other spinal related tumors and lesions. PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

MRI Methodology of Analysis, *MRI methodology of analysis, MRI interpretation sequencing of the cervical, thoracic, and lumbar spine inclusive of T1, T2, STIR and 3D gradient studies to ensure the accurate diagnosis of the region visualized.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

MRI Clinical Application, *The clinical application of the results of space occupying lesions. Disc and tumor pathologies and the clinical indications of manual and adjustive therapies in the patient with spinal nerve root and spinal cord insult as sequelae.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

MRI Disc Overview & Imaging Protocols, *MRI protocols clinical necessity, MRI slices, views, T1, T2, STIR, axial, stacking, FFE, FSE, and sagittal images. Clinical indication for the utilization of MRI and pathologies of disc in both trauma and non-trauma sequellae, including bulge, herniation, protrusion, extrusion, and sequestration.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

MRI Interpretation of Lumbar Bulges/Degenerative Disc Disease, *MRI slices, views, T1, T2, STIR, axial, stacking, FFE, FSE and sagittal images in the interpretation of lumbar degeneration. With the co-morbidities and complications of stenosis, pseudo-protrusions, cantilevered vertebrae, Schmorl's nodes and herniations. Central canal and cauda equina compromise interpretation with management.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

MRI Interpretation of Lumbar Herniated Discs, *MRI slices, views, T1, T2, STIR, axial, stacking, FFE, FSE and sagittal images in the interpretation of lumbar herniations. With the co-morbidities and complications of stenosis, pseudo-protrusions, cantilevered vertebrae, Schmorl's nodes and herniations. Morphology of lumbar disc pathologies of central and lateral herniations, protrusions, extrusions, sequestration, focal and broad based herniations are defined and illustrated. Central canal and cauda equina compromise interpretation with management.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

MRI Interpretation of Cervical Bulges/Degenerative Disc Disease, *MRI slices, views, T1, T2, STIR, axial, stacking, FFE, FSE and sagittal images in the interpretation of cervical degeneration. With the co-morbidities and complications of stenosis, pseudo-protrusions, cantilevered vertebrae, Schmorl's nodes and herniations. Spinal cord and canal compromise interpretation with management.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

MRI Interpretation of Cervical Herniated Discs, *MRI slices, views, T1, T2, STIR, axial, stacking, FFE, FSE and sagittal images in the interpretation of cervical herniations. With the co-morbidities and complications of stenosis, pseudo-protrusions, cantilevered vertebrae, Schmorl's nodes and herniations. Morphology of cervical disc pathologies of central and lateral herniations, protrusions, extrusions, sequestration, focal and broad based herniations are defined and illustrated. Spinal cord and canal compromise interpretation with management.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

MRI Interpretation Virtual Grand Rounds, *MRI interpretation of degenerative spine and disc disease with overlapping traumatic insult to both spine and disc. MRI slices, views, T1, T2, STIR, axial, FFE, FSE and sagittal images in the interpretation of degenerative spondylolisthesis, spinal canal stenosis, Modic type 3 changes, central herniations, extrusions, compressions, nerve root compressions, advanced spurring and thecal sac involvement from an orthopedic, emergency room, chiropractic, neurological, neurosurgical, physical medicine perspective.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2021

Triaging and Reporting While Maintaining Ethical Medical-Legal Relationships - Neurodiagnostics, Imaging Protocols and Pathology of the Trauma Patient, *An in-depth understanding of the protocols in triaging and reporting the clinical findings of the trauma patient. Maintaining ethical relationships with the medical-legal community.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Physical Examination & Documentation for the Trauma Patient - Diagnostics, Risk Factors, Clinical Presentation and Triaging the Trauma Patient, *An extensive understanding of the injured with clinically coordinating the history, physical findings and when to integrate neurodiagnostics. An understanding on how to utilize emergency room records in creating an accurate diagnosis and the significance of "risk factors" in spinal injury.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Crash Dynamics and Its Relationship to Causality, *An extensive understanding of the physics involved in the transference of energy from the bullet car to the target car. This includes Gs of force, newtons, gravity, energy, skid marks, crumple zones, spring factors, event data recorder and the graphing of the movement of the vehicle before, during and after the crash. Determining the clinical correlation of forces and bodily injury.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

MRI, Bone Scan and X-Ray Protocols, Physiology and Indications for the Trauma Patient, *MRI interpretation, physiology, history and clinical indications, bone scan interpretation, physiology and clinical indications, x-ray clinical indications for the trauma patient.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Neurodiagnostic Testing Protocols, Physiology and Indications for the Trauma Patient, *Electromyography (EMG), Nerve Conduction Velocity (NCV), Somato Sensory Evoked Potential (SSEP), Visual Evoked Potential (VEP), Brain Stem Auditory Evoked Potential (BAER) and Visual-Electronystagmography (V-ENG) interpretation, protocols, and clinical indications for the trauma patient.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Documentation and Reporting for the Trauma Victim, *Understanding the necessity for accurate documentation and diagnosis utilizing the ICD-9 and the CPT to accurately describe the injury through diagnosis. Understanding and utilizing state regulations on reimbursement issues pertaining to healthcare.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Documenting - Clinically Correlated Bodily Injury to Causality, *Understanding the necessity for accurate documentation, diagnosis and clinical correlation to the injury when reporting injuries in the medical-legal community. Documenting the kinesiopathology, myopathology, neuropathology, and pathophysiology in both a functional and structural paradigm.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2021

Primary Spine Care 10 - Case Management of Mechanical Spine Pathology, *Clinical Grand Rounds of herniated, protruded, extruded, sequestered and bulging discs. Differentially diagnosing vascular vs. mechanical spinal lesions and the necessity for urgent vascular, neurological intervention. Collaborating in a team environment utilizing a neuroradiologist, electrophysiologist, and neurosurgeon with the chiropractor as the primary spine care provider.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2020

Primary Spine Care 10 - Spinal Biomechanics; A Literature Perspective, *An evidence-based model for spinal biomechanical engineering and pathobiomechanics considering the pathophysiological limits in translations, angular deviation, and rotational planes. Utilizing the Cartesian system in plotting vertebral points to demonstratively conclude an accurate diagnosis,*

prognosis, and biomechanical treatment plan with the consideration of long-term care in the non-specific mechanical spine pain patient when necessary. PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2020

Primary Spine Care 10 - MRI Spine Interpretation, *An evidence-based understanding of time-related etiology of disc pathology considering the American Society of Neuroradiology's designation of protrusion, extrusion, and sequestration of spinal discs, Considering the signal intensity of discs in age-dating pathology and acquisition protocols for advanced spinal imaging.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2020

Primary Spine Care 10 - Trends in Spinal Healthcare, *Analyzing spinal healthcare trends in both utilization and necessity and understanding the marketplace and how a level of clinical excellence is reflected in a doctors' documentation and credentials. Treatment pathways in triaging spinal pathobiomechanics.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2020

Primary Spine Care 10 - Spinal Biomechanical Engineering Clinical Grand Rounds, *Case reviews utilizing E/M, MRI, and x-ray mensuration report to conclude an accurate diagnosis, prognosis, and treatment plan. Common diagnosis requiring interprofessional collaboration with a discussion of diagnostic dilemmas and proper communication methods.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2020

Primary Spine Care 10 - Spinal Biomechanical Engineering Clinical Application, *History of clinical biomechanics with an emphasis on the diagnosis and management of spine pain of mechanical/functional origin. Evidence-based symptomatic vs. asymptomatic parameters using peer-reviewed medical index literature. Computerized mensuration analysis of spinal biomechanical pathology. Comparison of demonstrable spinal biomechanical failure on imaging to clinical evaluation and physical examination.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2020

Primary Spine Care 10 - Using Documentation and Ethical Relationships, *Pathways to improve coordination of care, interprofessional communication with collaborating physicians. Maintaining ethical relationships in the medical-legal community through documentation and communication of demonstrable diagnosis, prognosis, and treatment plans.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2020

Primary Spine Care 10 - Pathobiomechanics and Documentation, *CPT Coding Guidelines for Initial and Established Patients with particular attention paid to Patient History, Review of Systems, Social and Family History, Physical Examination, and Medical Decision Making. Specific differences in coding levels and required elements for a 99202-99203-99204-*

99205. PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2020

Diagnosing and Case Management, *The requirements for diagnosing imaging inclusive of static x-rays, biomechanical x-rays, and MRI. Documenting the clinical findings of disc bulge, herniation, protrusion, extrusion, and fragmentation. Coding, diagnosing, and documenting individual treatment encounters in the clinical setting.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2020

Diagnosing and Case Management, *The requirements for diagnosing based upon an initial evaluation and management encounter ranging from a 99202 - 99205 that includes comorbidities, non-musculoskeletal, and sequellae to injury diagnosis.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2020

Primary Spine Care 2 - Chiropractic Spinal Adjustment Central Nervous System Processing, *Literature reviews of mechanoreceptor, proprioceptor, and nociceptor stimulation of lateral horn gray matter with periaqueductal stimulation affecting the thalamus and cortical regions with efferent distribution in disparate regions of the body in both pain and systemic stimulation.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Setauket, NY, 2020

Primary Spine Care 2 - Chiropractic Evidence, *Analyzing segmental pathology, adjusting vs. mobilization with cervicogenic headaches, Opioid alternatives and case management of mechanical spine pain based upon outcome studies.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Setauket, NY, 2020

Primary Spine Care 2 - Utilizing Research in Trauma, *The ability of your electronic health records to convey tissue pathology while documenting case studies, field experiments, randomized trials and systemic literature reviews, introducing evidence-based macros in documentation to support the literature and necessity of care.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Setauket, NY, 2020

Primary Spine Care 2 - Spinal Trauma Pathology, *Morphology of healthy and traumatized connective tissue and the permanency implication of adhesions, spinal disc morphology in the healthy and pathological patient as sequella to trauma in relationship to bulges, herniations, protrusions, extrusions, and sequestrations. Aberrant spinal biomechanics and negative sequella to trauma.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2020

Patient Intake - History and Physical Examination, *Determining the etiology of the patient's complaints in a traumatic or non-traumatic scenario. Analyzing the patient's history and review of systems along with the performance of a complete orthopedic, neurological, and clinical*

examination to correlate both past, current and causality issues to formulate an accurate diagnosis, prognosis, and treatment plan. There is an emphasis on triaging both the trauma and non-trauma patients. PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2020

Primary Spine Care 1 - Contemporary Spine Research and Documentation, *Central nervous system connection and the thalamus-hypothalamus connection in both ascending and descending central pathways with neuro-endocrine implications that have the mechanism to be components of Schizophrenia, Dementia and Alzheimer's with a linear relationship to the chiropractic spinal adjustment and chronic pain.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2020

Primary Spine Care 1 - Hospital Administration, Triage, Clinical Requirements and Collaborative Relationships with Medical Specialists, *Understanding hospital and medical specialist's care paths for mechanical spine pain pathology and integrating the Doctor of Chiropractic in the hospital and allopathic treatment protocols.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2020

Primary Spine Care 1 - Spinal Biomechanical Engineering and MRI Spine Interpretation, *Integrating Spinal Biomechanical Engineering and MRI Spine Interpretation into a primary spine care model, inclusive of necessity and acquisition protocols. A comprehensive review of the latest evidence in documenting mechanical issues.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2020

Primary Spine Care 1 - Credentials and Knowledge Base, *The credentials and knowledge based from an academia perspective when cooperatively treating in a collaborative environment inclusive of understanding pathology and mechanical spine issues.* PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2020

ADVANCED PRINCIPLES OF T.M.J., RIB AND SHOULDER GIRDLE ADJUSTING, *Diagnosis and treatment of these extremity joints is made by a thorough understanding the biomechanical functions of each joint.* Certification in Certified Chiropractic Extremities Practitioner, Council on Extremity Adjusting, Council on Extremity Adjusting, Boise, Idaho, 2009

ADVANCED PRINCIPLES OF UPPER EXTREMITY ADJUSTING, *Understanding the approach to diagnosing shoulder, arm and hand subluxations, entrapments, and thoracic outlet syndromes.* Certification in Certified Chiropractic Extremities Practitioner, Council on Extremity Adjusting, Council on Extremity Adjusting, Boise, Idaho, 2009

ADVANCED PRINCIPLES OF LOWER EXTREMITY ADJUSTING, *Learn the kinetic chain and biomechanics of the lower extremity. Understand the involuntary mechanics of the gait*

pattern. Certification in Certified Chiropractic Extremities Practitioner, Council on Extremity Adjusting, Council on Extremity Adjusting, Boise, Idaho, 2009

INTRODUCTION TO PRINCIPLES OF FOOT, GAIT AND ORTHOTICS, *Posture, both static and kinetic, is discussed and demonstrated. Primary and secondary shock absorbers of gait are related to their major muscle and nerve root. Neutral position of the foot is defined and demonstrated when it is pathomechanical and truly neutral. Structural deformities such as leg length, rear foot and forefoot varus/valgus, functional hallucis limitus (FHL), equinus, and others will be covered.* Certification in Certified Chiropractic Extremities Practitioner, Council on Extremity Adjusting, Council on Extremity Adjusting, Boise, Idaho, 2009

SOFT TISSUE METHODS FOR THE SPINE AND EXTREMTIES, *This course expresses the relationship of soft tissue (muscles, tendons, ligaments and especially the fascial system) to the function and dysfunction of the spine and extremities. It develops the concept that the articulations and soft tissues of the body are directly related and continuous throughout the body. Soft Tissue Methods introduces hands-on methods to treat peripheral neural and vascular entrapments, fascial, muscle, tendon, and ligamentous restrictions.* Certification in Certified Chiropractic Extremities Practitioner, Council on Extremity Adjusting, Council on Extremity Adjusting, Boise, Idaho, 2009

ADVANCED PRINCIPLES OF EXTREMITY REHABILITATION, *In this session, you will learn the etiology of soft tissue injuries, the general mechanism of soft tissue healing, and how to apply these principles to initiate and carry out musculoskeletal rehabilitation programs. Review the most common extremity injuries encountered in your practice, the modes of injury, exam findings, diagnosis, and the most important facets of rehabilitating these injuries.* Certification in Certified Chiropractic Extremities Practitioner, Council on Extremity Adjusting, Council on Extremity Adjusting, Boise, Idaho, 2009

GLOBAL ASSESSMENT OF EXTREMITIES, *Global Assessment of Extremities recognizes the interrelationship and the necessary intimacy of the spine to the extremities. Extremity dysfunction can and does affect the overall performance of the neuromusculoskeletal system. Thus, a "global" method of evaluation, analysis, and management is necessary. Understanding the signs, symptoms, and syndromes in a 'whole body' management format will solidify the practical application of the principles teamed in all prior modules.* Certification in Certified Chiropractic Extremities Practitioner, Council on Extremity Adjusting, Council on Extremity Adjusting, Boise, Idaho, 2010

SELECTED MEMBERSHIPS

North American Spine Society, 2022 - Present

Rockbridge County Chamber of Commerce, 2021 - Present

Academy of Chiropractic, 2020 – Present

Unified Virginia Chiropractic Association, 2017 – Present

Council on Extremity Adjusting, 2009 –2021

SELECTED HONORS AND AWARDS

Clinical Excellence Awards, Bronze Award, Academy of Chiropractic, 2021

Best Bedside Manner, Bronze Winner, Our Health Richmond, 2019

SELECTED COMMUNITY SERVICE

Clover Hill High School – Marching Cavaliers Marching Band Pit Crew, Midlothian, Virginia, 2022 - 2023

Clover Hill High School – Marching Cavaliers Marching Band Pit Crew, Midlothian, Virginia, 2021 - 2022

United Way of Rockbridge – Sponsor for the Community Children's Book Drive, Lexington, Virginia, 2021

House of Prayer - Security Team Member, Chesterfield, Virginia, 2016 – 2017

House of Prayer - Fall Festival Team Member, Chesterfield, Virginia, 2017 – 2017

Down Syndrome Association of Northern Virginia - Finance Committee, Fairfax, Virginia, 2008 – 2010

Down Syndrome Association of Northern Virginia - Buddy Walk Committee, Fairfax, Virginia, 2009 – 2010

New Hope Church - Board of Directors, Bloomfield, New York, 1999 – 2001