Legislative Testimony
Committee on Public Health
HB 5447 AAC The Certificate of Need Process
Friday, March 12, 2010
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Senator Harris, Representative Ritter and members of the Committee on Public Health, my name is Dr. John A. Raus and I have been practicing dentistry for 34 years in Stamford Connecticut. I wish to personally thank you for the opportunity to present this written testimony to you regarding HB 5447.

I speak in favor of HB 5447.

Cone beam technology is currently allowed in private practice offices in 48 of 50 states, with Michigan and Connecticut being the only two states to preclude it. When introduced into Connecticut dental offices, it will save time, increase the accuracy of treatment planning, lessen radiation exposure and diminish the likelihood of undesirable surgical outcome.

This technology gets its name from the cone-shaped beam of X-rays used to collect a complete image. Unlike conventional CT scan, which takes a series of thin-sliced X-ray images and then stacks them together to create a complete picture, cone beam CT produces a more sophisticated image in less time and with less X-ray exposure.

Dentists traditionally take two-dimensional radiographs, such as panoramic, perapicals, or cephalometric X-rays, to scan patients' jaws and develop diagnostic images. But 2-D imaging can be inaccurate because it "flattens" 3-D structures. Images can be distorted and magnified. Tissues appear overlaid, which makes it difficult to distinguish one tissue or bone area from another and difficult to determine the location of critical anatomies. Dentists may not be able to see patients' unique soft tissue, bone, and tooth structures, which can lead to mistaken diagnoses and surgical errors.

Cone beam imaging takes complete three-dimensional scans of human oral and maxillofacial features, and clearly displays them on a computer screen in minutes. Dentists can see — in 360 degrees — undistorted, virtual rotating models of the jaw and face. The models created via 3-D scan reveal the complete makeup of jaw and skull bones, tissues, nerves, and face. There's no guessing or approximating. This leads to greater accuracy, precision, and efficiency in patient diagnosis, treatment planning, and evaluation. Practitioners can zoom in on one area, revealing issues undetectable with 2-D scans. This gives dentists better insight into the relationship between patients' underlying dental structures and soft tissues.

Treatment planning and patient acceptance can be delayed when dentists send patients to medical imaging centers. Often these procedures must be preauthorized with the patient's insurance company, which can take days. Additional time may be consumed to obtain an appointment, process the patient, and obtain an official report. Without the appropriate software and training, these centers may have limited ability to clean up scatter caused by metal fillings and extraneous image data, sometimes resulting in low quality copies.

Thanks to the detailed information dentists uncover beforehand in a cone beam scan, surgical procedures experience dramatically fewer unexpected issues, which increases surgical predictability and thereby improves recovery time. Cone beam machines also pose a lower safety threat because they emit over 10 times less radiation than a medical CT.

This legislation provides the tremendous advantage that 3-D image processing will occur in the dental office taking only minutes. Dentists don't have to wait days to see images, speeding diagnosis and treatment planning. Appointment times are shorter and more convenient for patients, and allows dentists to see more patients daily. Immediate, in-office processing lets dentists show patients their images to help clarify surgical procedures. This puts patients at ease when they consider surgical treatment.

Cone beam technology has important applications in virtually all dental care procedures, including implants, tooth extractions, impactions, TMJ disorders, endodontic and infection treatment, trauma, orthognathic surgery, oral pathology, and more.

In every case, 3-D's detail and precision reveals what 2-D can't — the true relationships between positions, shapes, and measurements of every oro-facial structure. Use of cone beam imaging is essential to understanding anatomic conditions not discernable with 2-D. These include:

• Implants — 3-D images make it easier for dentists to assess patients' anatomy for implant diagnosis and planning. They can accurately identify bone dimensions and quality through the images' density shading. A screening cone beam scan helps dentists determine if the patient qualifies as an implant candidate, which saves the time and expense of conducting a complete workup if they are not. If the patient is a candidate, dentists can use the information to select the most suitable implant size and type with the aid of a scannographic guide, and accurately determine placement and alignment pre-operatively without disturbing surrounding structures. Using the cone beam scan and compatible software, dentists can then expedite treatment by fabricating, through the use of CAD/CAM technology, bone-borne, tooth-borne, or soft tissue-borne surgical guides before surgery that are then used at the time of surgery for precise implant placement. This is done without taking an intra oral impression.

• TMJ — Dentists can use 3-D imaging to identify problems associated with the temporomandibular joint. They can adjust the contrast on the computer screen to visualize the

TMJ, and evaluate the joint space of the articular disc. They can also identify bone-to-bone contact, small inclusion cysts within the condylar head, and the overall anatomy of the TMJ complex. Dentists can also rapidly take sequential images as patients open their mouth to pinpoint anomalies or asymmetric opening patterns.

• Impacted teeth — 3-D imaging provides true-to-life views of impacted molars, cuspids, and other supernumerary anomalies, enhancing the surgeon's ability to locate these teeth for surgical uncovering or extraction. Dentists can see how impacted teeth are associated with such vital structures as the mandibular nerve or sinus and surrounding adjacent teeth, so they don't have to perform "exploratory" surgery. This helps dentists speed treatment planning and minimize errors and complications during surgery.

• Sinus augmentation and grafting — 3-D images help dentists determine if bone grafting or a sinus lift is feasible or necessary to hold implants. They can use the images during diagnosis to accurately evaluate the condition of the maxillary sinus, locate critical anatomy, and evaluate bone density. If they determine an augmentation or grafting procedure is appropriate, dentists can identify the exact amount of graft material they can place, and a location for it. Finally, they can use the images to pinpoint where to enter the sinus and insert the donor bone for easier and safer surgery.

• TADs (Temporary Anchorage Devices) — 3-D imaging is also useful for treatment planning the location of placement of orthodontic screws to aid in orthodontic movement of teeth.

In closing, I would like to again thank the Committee for allowing me to submit this written testimony and would be happy to make myself available at any time should you have questions.

Sincerely,

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