



Clinical update

A proposed protocol for hand and table sanitizing in chiropractic clinics and education institutions

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Abstract

Objective: By nature, chiropractic is a hands-on profession using manipulation applied to the joints with direct skin-to-skin contacts. Chiropractic tables are designed with a face piece to accommodate the prone patient's head in a neutral position and hand rests to allow for relaxed shoulders and upper spine so treatment is facilitated. The purpose of this article is to present a proposed guideline for hand and treatment table surface sanitizing for the chiropractic profession that is evidence-based and can easily be adopted by teaching institutions and doctors in the field.

Methods: A review of the chiropractic literature demonstrated that pathogenic microbes are present on treatment tables in teaching clinics at multiple facilities, yet no standardized protocols exist in the United States regarding table sanitizing and hand hygiene in chiropractic clinics or education institutions. This article reviews the scientific literature on the subject by using several search engines, databases, and specific reviews of documents pertaining to the topic including existing general guidelines.

Results: The literature has several existing guidelines that the authors used to develop a proposed protocol for hand and table sanitizing specific to the chiropractic profession.

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Recommendations were developed and are presented on hand hygiene and table sanitizing procedures that could lower the risk of infection for both clinical personnel and patients in chiropractic facilities.

Conclusion: This article offers a protocol for hand and table sanitizing in chiropractic clinics and education institutions. The chiropractic profession should consider adoption of these or similar measures and disseminate them to teaching clinics, institutions, and private practitioners. © 2009 National University of Health Sciences.

Introduction

The chiropractic profession has grown to become one of the most frequent providers of non-allopathic care for a multitude of neuromusculoskeletal conditions including, but not limited to, low back, neck, and extremity conditions.¹ In addition, the chiropractic profession is traditionally a hands-on profession, treating a variety of conditions with manual manipulation of the spinal column and other joints.² By the very nature of the procedure, hand-to-patient contact is required. For many procedures the patient is placed prone on a treatment table with a special fitted headrest that has a face piece to accommodate the nose by providing a comfortable position for the patient. In addition, hand rests are also present on most treatment tables to allow positioning of the hands so the arms are relaxed for procedures directed at the spine.

According to cross-sectional studies, such as the National Health Interview Survey, approximately 10% of Americans are under the care of a doctor of chiropractic (DC) at a given time.³ The demography of chiropractic patients is similar to that of the United States and crosses most social and economic categories, although minorities and lowest social and economic groups tend to seek out the care of a DC less frequently.⁴

Previous assessments of chiropractic treatment tables in teaching clinics, although few in number, have found pathogenic microbes and allergens on table surfaces.⁵⁻⁹ Hand hygiene and proper surface sanitizing are known to reduce the spread of pathogenic microbes in health care settings as well as reduce the presence of surface pathogens on treatment tables.^{5,7,9-12} The purpose of this article is to present a proposed guideline for hand and treatment table surface sanitizing for the chiropractic profession that is evidence-based and can easily be adopted by teaching institutions and doctors in the field.

Methods

Databases such as Medline, Mantis, and CINAHL were reviewed along with the investigators' own article files for articles that assessed pathogens on chiropractic tables and on hand hygiene issues in chiropractic. Searches for existing guidelines on hand sanitizing/hand washing and table sanitization specific for chiropractic were made using the above databases and Google including Google Scholar. Search terms included *hand washing/hand hygiene, microbes and chiropractic, microbes and chiropractic treatment tables, pathogenic microbes and chiropractic treatment tables*, and such. In addition, specific guidelines from the US Centers for Disease Control and Prevention (CDC) and other US government-based reports such as the Occupational Safety and Health Administration, along with guidelines from other countries, were reviewed when they existed specific to the chiropractic profession. These guidelines were found by searching those specific web sites mentioned and by reviewing searches derived from Google's search engines. The findings are summarized below with recommendations for a national protocol on table and hand sanitizing in chiropractic offices and teaching institutions.

Results

Our literature search found 4 articles published on microbial analysis of chiropractic treatment table surfaces⁵⁻⁸; 1 article on attitudes, beliefs, and current practices of students on hand hygiene and table sanitizing in chiropractic¹³; and 1 poster presentation on the attitudes, beliefs, and current practices presented at the American Public Health Association's Conference in 2007.¹⁴ In addition, one presentation at the 2008 Association of Chiropractic College's Research Agenda Conference was made on the topic of microbes on treatment tables along with a successful surveillance

system and management effort to reduce risks.⁹ The above referenced literature is reviewed in the Discussion section below.

Review of the chiropractic literature revealed no evidence of scholarly activity on guidelines within chiropractic practice outside of the clinical academic setting with the exception of guidelines on risk management developed by the Chiropractic and Osteopathic College of Australasia in 2003 reviewed below.¹² Numerous accepted guidelines were located within the broader arena of health care and medicine including recommendations from (1) the CDC, (2) the physician-based taskforces, (3) the Occupational Safety and Health Administration, (4) the National Safety Council, and (5) a South Carolina document for chiropractic facilities. This document appeared to be a regulatory instrument for chiropractic in-patient facilities.

It should be noted that it is beyond the scope of this article to address the full range of health care site infection control as comprehensive and universal guidelines currently exist regarding infection control pertaining to areas way beyond the narrow scope of chiropractic treatment tables. The various guidelines that do exist and how they should be considered in reference to chiropractic practices and facilities are presented below.

Discussion

Chiropractic treatment tables were studied in 1990 by Pokras and Iler,⁵ where they sampled the bacterial load on chiropractic headrest and headrest paper surfaces at a Los Angeles teaching clinic. In an effort to determine if the headrest paper was an effective barrier to pathogens on the table, they identified *Staphylococcus aureus* and other bacteria on face pieces of treatment table surfaces. They concluded that the face paper, although a barrier to contamination on the actual table surface, contained the *S aureus* bacteria. In addition, they tested the surface after disinfection with an alcohol wipe and found it to be effective in decontamination of the table.

In 2006, Bifero et al⁶ assessed for the presence of microbes on treatment tables in a teaching clinic in Chicago and found a variety of microorganisms including fungi and *Staphylococcus*. Even more significantly, they isolated methicillin-resistant *S aureus* (MRSA) from 2 of 9 randomly selected outpatient treatment tables. Furthermore, these investigators found *Escherichia coli* and other pathogens on treatment tables, quantifying colonies from the

headrest and thorax sections of the table as well as the hand rests. These investigators noted greater concentrations on hand and face-piece/headpiece sections.

In 2007, Evans et al investigated the presence of pathogenic microbes on vinyl treatment tables in an outpatient teaching clinic in Dallas, Texas, and evaluated the effectiveness of 2 disinfecting agents. After establishing the presence of pathogenic microbes on 5 treatment tables, including MRSA on the head-piece section of one table, the investigators proceeded to sanitize one side of the head pieces and hand rests with an isopropyl alcohol wipe and the other with a Lysol Brand wipe (Reckitt-Benckiser, Berkshire, UK).⁷ Both methods were equally effective in eliminating all pathogens.

Evans et al in Dallas followed up with a study testing for the presence of microbes and potential allergens on cloth-covered treatment tables. Samples were taken from all cloth-covered tables located in the clinic, which were limited to student and family use, using a Rodac plate (Becton, Dickinson, Sparks, MD) containing nutrient agar.⁸ Confirmatory testing of specific cultures verified the presence of numerous allergens including the genus *Candida*, bacteria, and other general molds. Among the bacteria was *S aureus*. These were isolated from headpieces and hand-rest sections of the table.

The report of a student with MRSA at a chiropractic college in Oregon recently led other investigators to increase disinfection efforts, surveillance, and pre- and posttesting of table surfaces. Their efforts were successful in reducing the number of tables with MRSA and other pathogenic microbes present on the surface.⁹

Attitudes and current behaviors

Evans and Breshears¹³ surveyed students in a chiropractic college regarding their attitudes, beliefs, and current practices on hand sanitizing/hand washing and table disinfection. Of 731 students eligible, 481 completed the survey. Eighty percent reported that it was important or very important to wash hands before and after each patient contact. Females were slightly more likely than males to report it of importance. Interestingly, more than half reported that they perceived that their fellow classmates and supervisors “never or rarely” washed or sanitized their hands between patients or when practicing on various student contacts. In addition, although 95% stated that they always changed table face paper, 80% said they “never or rarely” wiped the table surface off with anything. In a follow-up focus group, students reported that their

primary reason for not cleaning tables was the lack of availability of any cleaning agents.

Among the students sampled by Evans and Bre-shears, 28% reported carrying personal hand sanitizer and were significantly more likely to say they “frequently or always” washed or sanitized hands. In addition, 87% of the total cohort reported that they would use hand sanitizer if it were available in the clinic for their use.

Floyd¹⁴ repeated the study by Evans and Bre-shears, administering the survey to 100 students at a teaching facility in Florida to evaluate their attitudes, beliefs, and current behaviors about hand and table sanitizing. Survey analysis indicated that 71.2% reported they frequently or always sanitized their hands with none stating they never performed this behavior and only 4.8% stating they rarely sanitized their hands. When asked what they noted others doing, 24.4% said they perceived fellow students or instructors “frequently or always” sanitized their hands. Approximately 19% said they thought others “never or rarely” performed this behavior. Regarding table sanitizing, 50% never or rarely wiped the table’s surface to sanitize it. An additional 23% said they occasionally performed this behavior, and 26% reported frequently doing this with no one stating they always performed this behavior.

Current chiropractic guidelines on hand and treatment table sanitizing

Regarding chiropractic guidelines within the United States that specify any instructions related to hand and treatment table sanitizing, one was found that described “minimum standards for licensing chiropractic facilities.”¹⁵ Approved by the South Carolina Board of Health and Environmental Control in 1981, the document appeared to be a regulation designed more for hospitals, proscribing rules ranging from what types of diets that could be served in the facility to general maintenance issues. Contained within one section describing procedures related the isolation of patients with contagious diseases, it states; “Isolation: The chiropractic facility shall provide written procedures for handling contagious diseases.” Nothing in this state document describes procedures for specific treatment table or hand sanitizing. The document appears to be something developed to regulate a chiropractic inpatient facility.

Looking outside the United States, the most comprehensive document found describing policies and procedures related to chiropractors was a 2003

comprehensive guide on risk management issued by the Chiropractic and Osteopathic College of Australasia.¹² The guide covers topics from patient-centered communication to reduction of risks in treatment. This document contains a section on specific prevention of infectious disease transmission. Under a section heading on “Prevention of Transmission in the Workplace,” the first bullet point contained specifics on general hygiene and states, “Staff should wash hands before contact with patients and gloves should be used whenever there is contact with the patient’s skin or bodily products.” Further into the document is a section describing infection control and general provisions within the practice setting, which states that hands should be washed vigorously before and after each patient contact and after eating or toilet use. The guideline specifically outlines recommended soaps, such as chlorhexidine, and details the procedures/care that should be taken in washing both surfaces of the hands as well as under the fingernails. In addition to other benchmark standards, the guide recommends that hand washing be performed anytime contact involves “two closed skin surfaces.” The guide stresses that gloves should be worn anytime clinical indication of skin disorders were noted and that treatment tables be covered in vinyl and disinfected between “each consultation.” This was the only chiropractic-specific guideline discovered that addressed treatment table disinfection.

National guidelines in the United States

A “Guideline for Hand Hygiene in Healthcare Settings” appeared in *Morbidity, Mortality Weekly Report (MMWR)* on October 25, 2002.¹⁰ This CDC document listed 3 primary reasons for hand sanitizing: (1) contact with a patient’s skin (eg, taking pulse, blood pressure or physical examination, lifting a patient), (2) contact with an environmental surface in immediate vicinity of patients, and (3) after glove removal. The *MMWR* guideline recommendations for hand hygiene were intended to decrease the (1) potential risks of transmission of microorganisms to patients; (2) potential risk for health care worker colonization or infection caused by organisms acquired from the patient; and (3) the mortality, morbidity, and costs associated with health care–associated infections.

In the typical chiropractic setting, hand-to-patient skin contact occurs frequently throughout the day. It is unknown how frequently pathogenic organisms are transmitted between chiropractors and their patients because chiropractic patients are unlikely to report

contact with their doctor as a source of infection. Clearly, it is both feasible and likely that infections have been spread from contact with chiropractor's hands on patients and from treatment table surfaces. Although the authors readily acknowledge that there are health care facilities where the risk of acquiring a health care-associated infection is much higher, it is also posited that (1) chiropractic offices are health care settings, (2) the *MMWR* guidelines are applicable to ambulatory settings such as chiropractic offices, and (3) the profession ethically shares in the responsibility to minimize avoidable risks to patients.

According to the *MMWR* guide, selection of hand hygiene agents should be as follows:

- Alcohol-based hand sanitizers are most efficacious for reducing the number of bacteria on the hands of personnel. Antiseptic soaps and detergents are the next most effective and non-antimicrobial soaps are the least effective.
- Soap and water are recommended for visibly soiled hands.
- Alcohol-based sanitizers are recommended for routine decontamination of hands for all clinical indications (except when hands are visibly soiled) and as one of the options for surgical hand hygiene.

The National Safety Council's manual on *Bloodborne and Airborne Pathogens* cites several workplace practices to reduce the spread of blood borne and other pathogens in a health care environment.¹⁶ Specific to these recommendations is a section on proper hand washing. The following are the specified hand washing general guidelines:

- Wash any exposed skin, ideally with antibacterial soap, as soon after an exposure as possible;
- While washing, be gentle with any scabs or sores;
- Wash all surfaces, including the backs of hands, wrists, between fingers, and under fingernails;
- Wash hands immediately after removing gloves or other personal protective equipment. Antiseptic towelettes and waterless liquid can be used when soap is not available. Important steps in the hand washing process according to the National Safety Council¹⁶ are listed in Fig 1.

In addition to hand washing, the National Safety Council manual addresses surfaces and bench tops in the manual. The manual recommends decontamination of any equipment, including bench tops and working surfaces, with 10% bleach solution at the end of the work shift because surfaces become obviously

1. Remove any jewelry and your watch. Do not let your clothing touch the sink.
2. Turn on water, and adjust the temperature to warm.
3. Wet your hands to above the wrists and lather up with soap. Keep your hands below your elbows throughout the hand washing.
4. Wash all areas of your hands and wrists for at least 20 seconds. Interlace fingers to scrub between them.
5. If your hands were exposed to infectious material, scrub beneath fingernails with a nail brush or nail stick.
6. Rinse wrists and hands well. (Repeat soaping and washing if your hands were exposed to infectious material.)
7. Dry hands thoroughly with paper towel, and dispose of it properly.
8. Use a dry paper towel to turn off the water faucet and open the door, and dispose of it properly.

Fig 1. Steps in hand washing from the National Safety Council's *Bloodborne and Airborne Pathogens* document.¹⁶

contaminated and after any spill of blood or other body fluid. Clearly then, a chiropractic treatment table should be considered as at least an equipment surface that should be disinfected to the degree recommended in these standards as a minimal requirement for infection control. However, because treatment occurs on the table where patient contact with the surface is required, the authors feel it should be considered a more critical surface. Suggested steps in table sanitizing are reviewed in Fig 2.

The CDC published *Guidelines for Environmental Infection Control in Healthcare Facilities* in 2003.¹⁷ This comprehensive document details needed measures in all health care facilities from dental to surgical hospital rooms. Although chiropractic offices are not mentioned specifically, recommendations within the guidelines do specifically refer to surfaces such as treatment devices as well as incidental environmental surfaces such as chairs and equipment knobs. A section of the manual details methods for the disinfection of various environmental surfaces.

The CDC uses the Spaulding classification system, which was developed for surface disinfection in the 1970s.¹⁸ Surfaces are categorized based on the purpose of the physical entity and the risk of microbial contamination. *Critical* surfaces are those where rigorous disinfection must be applied such as in operating rooms and on surfaces that required a sterilization process before coming in contact with patients. Surgical instruments and tables would fall into this category. *Semicritical* are those requiring less

1. Remove soiled face paper from facial/head piece section of table so head piece is exposed.
2. Apply wipe or suitable solution evenly to cover surface of face/head piece, including face paper bar, chest piece of table, hand rests. (If spray is used, cover entire surface by spreading solution with paper towel to cover table surfaces evenly.)
3. Allow to air dry.
4. Replace face paper on table.
5. Repeat after each patient.

Fig 2. Steps in cleaning chiropractic treatment table with sanitizing wipe.

decontamination but still need to be treated with some germicidal substance. *Noncritical* are those surfaces where decontamination is not a serious issue but cleaning and some form of routine care is involved. This may include surfaces that do not necessarily have to be sterile or decontaminated before each use but should be clean.

Subsequently, the CDC added a category called “environmental” surfaces. This may include x-ray machine knobs, carts, or even chairs and carpet within a health care environment such as a hospital room. Some of these require only routine cleaning with a vacuum or wipe and some may need more rigorous methods depending on whether they are directly used in delivering medical care. Disinfection levels, also described by Spaulding, are divided into 3 types based on the potential for various microbial contamination. *High, intermediate, and low levels* of disinfection may be required for various surfaces. In reviewing the various Spaulding classifications and levels of disinfection, chiropractic treatment surfaces would likely be considered noncritical or environmental surfaces although, secondary to the face and hand contact points on treatment tables, they should be considered surfaces that require routine cleaning and sanitization. For vinyl-covered surfaces, an intermediate- or low-level disinfectant or germicide will likely be the agent of choice. These typically contain 60% to 90% isopropyl or ethyl alcohol, sodium hypochlorite, or phenols. As with cleaning any manufactured product, it is highly recommended that chiropractors consult with the various equipment manufacturers to assess any potential impact secondary to the regular use of these types of chemicals/cleaning agents. It cannot be overemphasized, as reinforced within this manual reviewing surface decontamination procedures, that health care provider hand hygiene is still the single most important factor in reducing contamination to treatment surfaces.

In June of 2007, secondary to renewed concern over MRSA, norovirus, *Clostridium difficile*, and potential bioweapons attacks, the CDC revised their guidelines for preventing transmission of infectious disease in hospitals and health care settings.¹⁹ Specific standard precautions listed for all patients in health care settings included (1) procedures to be developed and implemented for routine care, cleaning, and disinfecting of environmental surfaces frequently touched in patient areas along with (2) respiratory hygiene and (3) cough etiquette. Although these guidelines covered the usual sharps recommendations (ie, proper handling and disposal of injection hypodermics) and other more specific issues for hospital facilities, the recommendations are for expanded precautions for hand hygiene before and after patient contact. The recommendations reinforced (1) the use of alcohol-based gels as the preferred method of hand hygiene between patients and (2) washing with soap and water anytime hands are visibly soiled. The CDC states that decontamination should be performed after contact with patients or when contact is made with medical equipment.

The 2007 update specifically addresses horizontal surfaces and states that these surfaces should be wet-dusted daily with cloths moistened with an Environmental Protection Agency–registered hospital disinfectant and detergent. This included furnishings in patient rooms. Although the following sections detail highlights pertinent to chiropractic practice, practitioners are strongly advised to become familiar with the guidelines in general.

Cloth and porous surfaces

Importantly, the CDC’s manual on environmental surfaces reveals mention of cloth surfaces in health care environments. The manual states these surfaces will likely represent chairs or sofas in waiting areas or hospital rooms. Studies have demonstrated vancomycin-resistant *Enterococcus* present in cloth chairs for weeks after contamination.²⁰ The CDC downplays the significance of cloth surfaces because they are typically not used in the delivery of medical treatment. However, this is not the case in chiropractic where patients are asked to permit exposure to contact with cloth treatment tables in ways (head, hands, nose, and mouth) that may not be typical of their normative use of waiting room furniture, thus presumptively assuming/expecting a higher degree of sanitary condition. As previously noted, a study on cloth, bench-type tables found numerous allergens and bacteria present when simply taking surfaces samples. It is unclear, and

in fact quite difficult, to see how those cloth surfaces can be adequately sanitized due their porous nature.

Occupational Safety and Health Administration

The Occupational Safety and Health Administration has issued a manual that specifically addresses model plans for reduction of risks from microbial pathogens and sets specific standards that should be a part of all health care facility operations manuals.²¹ This manual goes into detail regarding how to develop an exposure control plan for these pathogens. It includes house-keeping issues, vaccination for hepatitis B, and how to handle spills and reduce exposure through proper personal protective gear. All teaching facilities are required to have a plan on file. In addition, the following General Duty Clause for the Occupational Safety and Health Administration appears in their manual for pandemic influenza preparedness²²:

“In addition to compliance with the hazard-specific safety and health standards, employers must provide their employees with a workplace free from recognized hazards likely to cause death or serious physical harm. Employers can be cited for violating the General Duty Clause of the OSH Act if they do not take reasonable steps to abate or address such recognized hazards.”

It is indicative from this general clause that failure to take seriously the sanitization of treatment surfaces could at least be considered a risk to employees and, therefore, should be considered a risk for patients who come in contact with those surfaces.

Compliance issues

In general, compliance with proper hand hygiene guidelines is poor among physicians, ranging around 50% of appropriate opportunities for hand hygiene, with practices among nurses only slightly better.²³⁻²⁵ There is a need for all health care providers, including DCs, to do a better job in this area. Regarding table sanitizing practices among DCs, the collective experiences of the authors indicate compliance to be even worse. Various reasons have been given for failure to comply with hand hygiene recommendations including time factors, lack of hand sanitizer, lack of sinks near treatment areas, or even failure to understand when there is an appropriate moment for hand hygiene outside the most obvious opportunities.²⁶ We assume this is the case for table sanitizing because there are not currently existing guidelines in the

chiropractic profession. Having proper guidelines, education materials and reminders present would be an essential first step to resolving the problem within the chiropractic profession.

In medicine, enhancement of compliance has been demonstrated using behavioral, theory-driven interventions aimed at changing individual knowledge, attitudes, and beliefs in conjunction with a mandated policy component.²⁶⁻³⁰ Supporting the efficacy of policy mandates, one study noted that threatening physicians with suspension of hospital privileges increased compliance.³¹ In addition, alcohol-based gels with lotion and emollients have demonstrated increased compliance over simple soap and water or gels without them so this is may also serve as a potential strategy among DCs.

Perhaps a final point regarding compliance deals with senior staff modeling the appropriate behavior. The past 50 years of social science research has stressed the importance of role models in influencing human behavior. Physicians can play an important role in improving compliance with hand washing/hand sanitizing because they are reinforcing role models for other physicians. In fact, some studies have indicated a greater negative impact from failure of senior clinicians to practice hand hygiene than positive change when they do.²⁶ This should still make the case for importance of behavioral modeling. In addition, exertion of peer pressure regarding the importance of hand sanitizing among their colleagues where possible, such as in a teaching institution, could be more effective because of interns and subordinates having to comply. Increased rates of compliance may be facilitated by mandating that senior staff model the behavior, through interactive education, enforced policies, and reward systems.^{30,32} Posters and other reminders may also be effective in this process, but it should be kept in mind that this is a behavioral change process and that some staff will resist changes unless consequences are in place that enhance compliance though policy. Multifaceted programs that are sustained over time are likely to work better than single-shot approaches with limited activities to enhance compliance. A guide to sanitizing hands with alcohol-based gels is supplied as Fig 3.

Very little has been done regarding sanitization or hygiene, including hand hygiene in chiropractic practice. Although chiropractic is a hand-to-patient contact profession, it is not known how well measures on table and personal hand hygiene will affect pathogenic microbes or risk factors regarding patient exposure because microbes seem to be adapting to various measures all the time. It is assumed that

1. Alcohol-based gel should be placed in convenient locations.
2. Dispense dime size portion of gel on palm of hand and rub over both hands and wrists including each finger to the ends.
3. After making sure all surfaces of the hand has been covered, allow to air dry and do not wipe excess gel off with towel.
4. Repeat procedure after each patient contact or contact with environmental surfaces.

Fig 3. Steps in alcohol-based hand hygiene.

methods adopted for the health care professions in general will also be effective in chiropractic practice. In addition, educational measures and compliance issues will need to be further tested in specific settings that involve chiropractic clinicians and personnel. Long-term surveillance programs on pathogens known to be present in chiropractic teaching clinics and outpatient facilities should be considered to monitor any education or compliance enhancement programs. Future research should test education and compliance programs and publicize the need for guideline adoptions profession-wide.

Conclusion

Microbes that are potentially harmful to both doctor and patient alike are known to be present on chiropractic treatment tables. In the absence of any standardized hand and table sanitizing protocols in the United States specifically targeting chiropractic teaching institutions and private practice clinics, the following recommendations, based on generally accepted best practices in other fields, are suggested:

Hand sanitizing

Guidelines on hand hygiene should mirror those for all health care providers. Hand sanitizing with an alcohol-based gel should be recommended as routine in chiropractic health care facilities. The alcohol-based gel should be at least 60% alcohol and contain emollients for skin sensitivity to facilitate use. Gels should be required in all teaching clinics, laboratories, and classrooms where skin-to-skin contact by hand occurs. No antimicrobial agent other than alcohol is necessary for effectiveness. This should be applied to the hands and each finger so that all surface areas are covered and the gel allowed to air dry as described above. When hands are visibly soiled, they should be washed with plain soap and water using the guidelines

for hand washing noted, which will reduce the potential threat of bacterial resistance from antimicrobial soaps. One of these two measures should be performed between each patient contact in practice or education settings involving laboratories that require skin-to-skin contact. Anytime the doctor, staff, or patient has a visible skin lesion that warrants extra precautions, gloves should be worn during the evaluation or treatment with the gloves disposed of appropriately when the task is completed and immediate hand sanitizing should follow.

Table sanitizing and disinfecting

Based on the guidelines that currently exist and discussed in this article, the authors suggest an appropriate method of table disinfection that requires surface sanitizing with an acceptable wipe or solution. Although face paper should always be used, application of a CDC or Environmental Protection Agency–approved sanitizing wipe or solution should occur between each patient treatment at a minimum, on the table to face, chest, and hand pieces of the table surface. Staff and supervising doctors should be alert to the necessity to sanitize additional/all surfaces of examination or treatment tables as needed when clinically indicated. In addition, use of a stronger agent may occasionally be required such as for cleaning blood or other body secretions in accordance with accepted guidelines. It is essential that hand, facial/head, and thoracic sections should be wiped and allowed to air dry, which can exceed 45 seconds. This drying process is part of the disinfecting process and should not be aided with use of a towel or paper wipe.

Cloth chiropractic treatment tables

There is no acceptable way to adequately sanitize cloth-covered treatment table surfaces. To our knowledge, no other health care provider groups employ the use of cloth on treatment surfaces. The use of these coverings should be discontinued immediately. Tables should be covered with a material that can withstand the types of cleaning described, and prefabricated vinyl slip covers are available as an affordable alternative to cloth covered tables preventing actual replacement of the treatment table.

National guideline adoption

Acknowledgement at the professional association level that these procedures should be routine will serve

to facilitate awareness and increase compliance within the chiropractic profession. It is suggested that the professional groups and associations such as the American Public Health Association's Chiropractic Healthcare Section facilitate the dissemination of this information and support a movement toward the adoption of a national guideline on hand and table sanitizing. In addition, it is recommended that the Council on Chiropractic Education, the profession's national accreditation agency, as well as state boards strongly consider mandating these measures. Lastly, future guidelines should focus on enhancing compliance with hand and treatment table sanitizing procedures.

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