

Journal of the American College of Dentists

A publication advancing
excellence, ethics, professionalism,
and leadership in dentistry

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The *Journal of the American College of Dentists* shall identify and place before the Fellows, the profession, and other parties of interest those issues that affect dentistry and oral health. All readers should be challenged by the *Journal* to remain informed, inquire actively, and participate in the formulation of public policy and personal leadership to advance the purposes and objectives of the College. The *Journal* is not a political vehicle and does not intentionally promote specific views at the expense of others. The views and opinions expressed herein do not necessarily represent those of the American College of Dentists or its Fellows.

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- A. To urge the extension and improvement of measures for the control and prevention of oral disorders;
- B. To encourage qualified persons to consider a career in dentistry so that dental health services will be available to all, and to urge broad preparation for such a career at all educational levels;
- C. To encourage graduate studies and continuing educational efforts by dentists and auxiliaries;
- D. To encourage, stimulate, and promote research;
- E. To improve the public understanding and appreciation of oral health service and its importance to the optimum health of the patient;
- F. To encourage the free exchange of ideas and experiences in the interest of better service to the patient;
- G. To cooperate with other groups for the advancement of interprofessional relationships in the interest of the public;
- H. To make visible to professional persons the extent of their responsibilities to the community as well as to the field of health service and to urge the acceptance of them;
- I. To encourage individuals to further these objectives, and to recognize meritorious achievements and the potential for contributions to dental science, art, education, literature, human relations, or other areas which contribute to human welfare—by conferring Fellowship in the College on those persons properly selected for such honor.

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DENTAL EDITORS PRIZE FOR JOURNALISM

4 Following Your Moral Compass: Ethics in Dental School

Michael Meru, DDS

ELECTRONIC DENTAL RECORDS

10 Electronic Dental Records in Dentistry

Larry Emmott, DDS

13 Converting to Electronic Dental Records

Stephen I. Hudis, DDS

16 Electronic Health Record Conversion in a Private Dental School

Richard Fredekind, DMD, MA

ISSUES IN DENTAL ETHICS

21 The Dental Patient Who Is "High:"

Ethical and Scientific Recommendations for the Standard of Care

Bruce Peltier, PhD, MBA; Lola Giusti, DDS; Terry Hoover, DDS;

Jennifer Fountain; Jared Persinger, DDS; and Scott Sutter

DEPARTMENTS

2 From the Editor

The Right Fight

35 Leadership

Evil Games



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FROM THE EDITOR

THE RIGHT FIGHT

The term “hero” somehow does not fit well on those who pick fights so they can demonstrate their prowess.

This editorial is about the old chestnut “Politics is too important to be left to the politicians.” Ditto: health care. My primary text is the *U.S. Army, Marine Corps Counterinsurgency Field Manual*, written by Generals David Petraeus and James Amos. This is not a how-to manual for defusing IEDs guide to killing people; it is the best book on American democracy I have read in decades. It is 400 pages long and available from Amazon for about \$10.

Health care is certainly as complex as war. The former accounts for 18% of our country’s GDP; the latter 6% (including about 10% of that amount for military health care). Metaphors abound enlisting us to fight birth defects, wipe out obesity, attach the causes of caries and periodontal disease. The idea is that health can be achieved by wiping out the causes of disease and the soldiers and generals in this campaign are the health professionals. The patient is literally the host, just as in insurgencies where armies intervene on behalf of host countries. On this view, healthcare professionals and generals are heroes in charge and body counts, including antibody counts, are a good way to keep score. In the Gallup surveys of trust for various American professions, nurses lead the pack, followed by pharmacists, physicians, and dentists. Consistently, however, officers in the armed forces score higher on public trust than do all

healthcare providers except nurses when they are included on the survey. Where is Hot Lips Houlihan when we need her?

But the metaphor is flawed. It is specifically rejected in the *Counterinsurgency Field Manual*. It is only one of several views of health care, and the one that is beginning to slip in popularity.

In the Golden Age of Greece, there were three schools claiming to be the correct way to promote health. The Asclepian School (from which we take the caduceus as a symbol for medicine) was popular at Delphi. Rich patients checked in at a resort-like environment for baths and divinations of their dreams. On what is now the Turkish coast, the Cnydian School (pronounced NII-dee-in) argued that ill health is caused by pathogens or other external forces. Cure consisted of diagnosing and destroying the unhealthy influence. On the Island of Cos, just across from the Cnydians, the School of Hippocrates felt that disease was the manifestation of an imbalance in the natural condition of the patient. The task of the healthcare professional was to help the patient regain control of his or her life—the physician stabilized the condition; the patient provided the cure.

Strains of all three traditions are evident in current-day health care, including dentistry. The currently dominant view is surgical, in the Cnydian tradition. But spa and esthetic dentistry would be recognized by the Asclepians, and Hippocrates would applaud caries management and preventive care as the true calling of professionals.

Surely, however, war is the business of the Cnydians. Find the bad guys and take them out. But evidently not according to Generals Prateous and Amos. There are perhaps three references in the 400 pages of the manual to necessity of killing intransigents. "Killing insurgents, while necessary, especially with respect to extremists, by itself cannot defeat an insurgency." That manual is about creating conditions that allow legitimate governments to regain their equilibria. "Counterinsurgency is military, paramilitary, political, economic, psychological, and civic actions taken by the government to defeat insurgency." The military mission is subservient to the political one, and military personal are answerable to civilians. The commander-in-chief of all American forces is a civilian, and wars can only be declared by Congress.

The goal of counterinsurgency is to allow a government to stand on its own feet, but only if it honors values of self-determination for citizens. This is the American ideal of democracy. In the *Counterinsurgency Field Manual*, this is itemized as meaning people must be free to decide about their own destiny as expressed in six standards: (a), perception of government legitimacy, (b) security for citizens, (c) free and frequent elections, (d) popular participation in government, (e) stability of institutions, and (f) a "culturally acceptable" level of corruption (as in the United States).

Two points bear emphasis: counterinsurgency uses a coordinated array of interventions to create conditions

where countries that are destabilized can regain equilibrium and this military effort is under civilian control. These echo the principles of Hippocratic health and important work being too important to leave to those who do it. The term "hero" somehow does not fit well on those who pick fights so they can demonstrate their prowess.

It might be feared that this is the new "soft" military. Clausewitz, the 18th century German strategist who set the tone for war up to our day, said, "The political object, as the original motive of the war, would be the standard for determining both the aim of the military force and also the amount of effort to be made." Going back much farther, the 4th century BC Chinese manual for war attributed to Sun Tzu, *The Art of War*, contains the timeless wisdom of choosing terrain, employing spies, engaging in deception, judging the character of opposing generals, and always leaving a means of flight available to the enemy so they may flee rather than fight out of desperation. This 2,400-year-old manual advises, "Thus a victorious army wins its victories before seeking battle; an army destined to defeat fights in hope of winning." In other words, winning armies prepare all the circumstances for the new equilibrium before engaging in battle. And one more point insisted on by Sun Tzu: politicians, and never generals, decide on war.

One metaphor for dentistry is that dentists save patients by deciding which interventions they want to use to wipe out the effects of disease. Another is that patients or groups of citizens enlist the help of professionals to help them reach the level of health they prefer. The timeless wisdom of military conflict and the venerable Hippocratic tradition encourage the second metaphor.



Following Your Moral Compass: Ethics in Dental School

Michael Meru, DDS

NOTE

This editorial won the 2009 American College of Dentists and American Association of Dental Editors Prize for Journalism. It appeared in the Spring 2008 issue of *Mouth*, the publication of the American Student Dental Association, and is reprinted by permission.

On an unusually tropical day in San Francisco, former dentist and oral surgeon Tony Protopappas appeared before the U.S. Supreme Court, March 24, 2004, with a writ of habeas corpus petitioning his release from prison. Twenty years earlier, in 1984, Protopappas was charged with second-degree murder and sentenced to three concurrent terms of 15 years to life for the deaths of three women that occurred while they were under general anesthesia.

Protopappas' career began shortly after he graduated from dental school and completed his oral surgery residency. He opened his Costa Mesa California Dental Clinic in 1974 and by 1982 the practice was flourishing. Protopappas employed five other dentists, as well as many office staff. He was the only practitioner in the office with a license to administer general anesthesia and was responsible for standardizing the doses given the patients that were prepared by the office assistants (*People v. Protopappas*, 1988).

On September 28, 1982, a feeble Kim Andreassen presented at the Costa Mesa Clinic for a root canal, three fillings, and a crown. Andreassen's medical history consisted of lupus, total kidney failure (requiring thrice-weekly dialysis), high blood pressure, anemia, a heart murmur, and a chronic seizure disorder. Her physician informed Protopappas that

she was not to be placed under general anesthesia. Despite the dentist having been warned by the physician, Andreassen was placed on an IV general sedation setup. During the procedure, signs of respiratory distress were noted by the assistant, yet Protopappas' reply was, "Maybe that's normal for her because she is so ill." Ten to 15 minutes later the respiratory distress worsened, her pulse became weak, and her face turned blue. Shortly thereafter the paramedics were called and brought Andreassen to the hospital. Upon arrival, Andreassen was pronounced clinically dead.

After the tragic events of September 28, Protopappas continued to practice as usual until the week of February 6, 1983. On Tuesday, February 8, Protopappas saw 13-year-old Patricia Craven for the removal of her third-molars, as well as for eight fillings and a crown. Craven was active and healthy, aside from her swollen tonsils. During the procedure, which was done under general anesthesia, Craven was given massive amounts of drugs, which caused her to go into a coma later that day. On Friday, February 11, while Craven was still in a coma, another patient, 31-year-old Cathryn Jones, sought dental care under general sedation at Protopappas' clinic. She was also given massive amounts of drugs,



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which caused her to go into a coma as well. Both Craven and Jones died days later and were found to have suffered massive drug overdoses.

After the third victim was pronounced dead, Tony Protopappas was brought to trial. One expert witness, an oral surgeon, testifying in regard to Andreassen's death, reported that the combination of drugs administered did not make any sense. He stated, "It is not a regimen to sedate a patient. It is illogical. It is—I don't know anybody who does this kind of thing for sedation or anesthesia. It is really an illogical approach to treating people" (*People v. Protopappas*, 1988).

From the *People v. Protopappas* case notes: "Dr. Frank McCarthy, chair of the anesthesiology department at the University of Southern California's dental school, testified that Andreassen's irregular breathing was symptomatic of severe toxicity and should have been interpreted as urgent and life threatening. He concluded Protopappas did not recognize or respond to Andreassen's Cheynes-Stokes breathing" (*People v. Protopappas*, 1988).

In his own defense, and throughout the trial, Protopappas maintained that he felt he was treating the patients correctly, to the best of his ability, and with no intent of harming anyone.

One aspect of his life that did not surface in his trial notes is the allegations he faced while in dental school. As described in an ethics class taught at the University of Southern California School of Dentistry, many people, including faculty and other students, knew very

well that Protopappas had problems with academic dishonesty and that he cheated numerous times. He put getting ahead in life, in the easiest manner possible, in front of the learning process that dental schools grant to each student in order to ensure proper breadth and depth of education.

There may or may not be a correlation between Protopappas's cheating in dental school and his eventual killing of three women. But as one study of medical students found, academic dishonesty during medical school does predispose a person to cheating in patient care later in life (Westerman et al, 1996). As dental students and future practitioners we are committed to being lifelong learners. Not only is that important for each of us to be successful, but it also ensures that those that we care for will also be protected. The arduous nature of continued study and practice should never take a back seat to finding the easy way out.

Protopappas' petition for writ of habeas corpus was denied on March 24, 2004, and he is currently serving his term in Folsom State Prison.

Academic dishonesty is a pandemic that has existed in our nation for decades and has continually worsened. A study of college students at the University of Georgia (Andrews et al, 2007) found that from 1969 to 1989, the percentage of students who admitted to cheating had doubled from 34% to 68%.

In dentistry, ethics is crucial, owing to the fact that patients seeking care place their well-being in the dentist's hands.

The profession of dentistry is ranked by consumers as one of the ten most trusted and ethical professions in America. So one might be inclined to believe that issues of academic dishonesty and cheating would be much less severe. In the August 2007 edition of the *Journal of Dental Education*, Andrews and others reported a study in which 1,153 dental students were surveyed in regards to academic integrity. The survey found that nearly 75% of the respondents admitted to some level of cheating. And during the past several years, the dental education community has been shaken with cheating scandals at dental schools around the nation.

According to the *Oxford American Dictionary*, "School of ethics in Western philosophy can be divided, very roughly, into three sorts. The first, drawing on the work of Aristotle, holds that the virtues (such as justice, charity, and generosity) are dispositions to act in ways that benefit both the person possessing them and that person's society. The second, defended particularly by Kant, makes the concept of duty central to morality: humans are bound, from a knowledge of their duty as rational beings, to obey the categorical imperative to respect other rational beings. Thirdly, utilitarianism asserts that the guiding principle of conduct should be the greatest happiness or benefit of the greatest number." The *Oxford American Dictionary* goes on to define ethics as "moral principles that govern a person's or group's behavior."

Nash, in the May 2007 issue of the *European Journal of Dental Education*, stated "ethics is about the basic moral

standards inherent in the structure of social living, incumbent on all human beings regardless of the presence or absence of any religious convictions."

In dentistry, ethics is crucial, owing to the fact that patients seeking care place their well-being in the dentist's hands. In the American Dental Association's *Principles of Ethics and Code of Professional Conduct*, it states, "The dental profession holds a special position of trust within society. As a consequence, society affords the profession certain privileges that are not available to members of the public-at-large. In return, the profession makes a commitment to society that its members will adhere to high ethical standards of conduct." Nash added that "The goal of the relationship in which one assumes the role of health professional and the other that of the patient is the benefiting of the patient."

The ADA's *Principles of Ethics and Code of Professional Conduct* sets forth five major ethical principles that dentists must adhere to. They are: autonomy (self-governance), nonmaleficence (do no harm), beneficence (do good), justice (fairness), and veracity (truthfulness). The document states that "members of the ADA voluntarily agree to abide by the ADA Code as a condition of membership in the Association. They recognize that continued public trust in the dental profession is based on the commitment of individual dentists to high ethical standards of conduct."

In 2002, the American Student Dental Association (ASDA) adopted its own code of ethics (http://asdanet.org/_aboutpage.aspx?id=1556) which states, "The American Student Dental Association recognizes the importance of high ethical standards in the dental school setting. Therefore, the Association believes students should conduct themselves in a manner reflecting integrity and fairness in both the didactic and

clinical learning environments. Ethical and professional behavior by dental students is characterized by honesty, fairness, and integrity in all circumstances; respect for the rights, differences, and property of others; concern for the welfare of patients, competence in the delivery of care, and preservation of confidentiality in all situations where this is warranted."

All ASDA members are also members of the ADA, and we commit to abide by the ethical principles within these two codes. Not only do we commit to observe these two codes, but also it is likely that we have codes of ethics and ethics curricula specific to our dental schools.

Despite the codes of ethics that we agree to live by and the principles taught to us by experts in the field of dental ethics, the harrowing statistic still stands—that nearly 75% of dental students admit to some form of cheating.

So in what nature do dental students cheat, and why? Instances that have been reported include cheating on exams, paying for patients, stealing lab equipment, charging out fake procedures to patients to earn points, stealing faculty usernames and passwords to increase production, stealing exams, using old exams, paying for outside lab work to be graded as one's own, compiling illegal national board exam questions, among many others. With advances in technology and the use of items such as cell phones, PDAs, cameras, hacking software, online file sharing sources, etc., cheating has never been so accessible to the masses.

For example, Andrews and others (2007) reported an instance where "ten students each using camera cell phones, [took] one picture of one page of an exam at varying times in an exam, then [collaborated and put] them into a Word

document to distribute to the next year's class," thus using technology to not only cheat themselves, but to tempt future classes into cheating as well.

In a survey of dental school deans conducted by Beemsterboer and others (2000), 83% of schools reported incidences of copying using didactic exams, 52% had occurrences of students writing untrue treatment records in patients' charts, and 50% reported that students had signed faculty names in a patient's chart.

Now we know how they cheat, but why? In the article written by Andrews and others (2007), many reasons as to why dental students cheat were revealed. Some of the prominent motivations were: "Everyone does it"—students felt that in order to be on a level playing field with the rest of their classmates, they had to cheat also; stress, pressure, and workload; belief that their administration does not enforce school policies on cheating; and they did not agree with the school's definition of cheating.

Academic dishonesty is contagious, both to yourself and to those around you. The basis of academic dishonesty being contagious to oneself is that continued cheating breeds two outcomes. First, it causes the person cheating to become desensitized to the inherently wrong nature of the act, making it easier to justify that same behavior in the future. Second, it fosters an attitude of complacency rather than hard work, because the cheater gets all of the glory without any of the stresses that come along the road to success.

The rationale for academic dishonesty being contagious to those around you is twofold as well. First and foremost is the reason stated by Andrews and others (2007) that when some students cheat, giving themselves an unfair advantage, the remainder of the students feel they must cheat in order to maintain

equity. Second, the supposed ease those who cut corners have in getting high grades and into residency programs causes others who may not have behaved that way to follow suit.

Issues of cheating are not the only ethical problems facing dental education today. One major ethical issue facing our profession is the use of live patients in the current format of clinical licensure exams. Dr. Brooke Loftis, ASDA's immediate past president, stated, "ASDA continues to fully support the elimination of live patients in its current format for the use of initial clinical licensure. How can we continue to allow an examination process that encourages marginally unethical behavior from students? We must protect our patients and provide them with the best care possible. After four years, the clinical licensure exam procedures I recently completed are the last clinical procedures I will perform within my dental school. I will never forget the students who were delaying treatment of patients, over-radiating their patients, over-treating lesions, and paying outside services for the supply of patients to use during the exam. How can this be ethical?"

So wherein lies the problem? The blame cannot be assigned to one group or individual. It is a shared burden—one that students, faculty, administrators, and the profession have to recognize, speak out against, band together and conquer.

Current dental ethics literature agrees that change must be made. The question is not if, but how to change. Below is a series of suggestions found in the literature (Andrews et al, 2007; Nash, 2007; Maitland, 2006) and compiled by the author:

Doing the right thing may have an immediate negative effect publicity-wise; but not punishing unethical behavior fosters continued unethical actions that will pollute and ultimately undermine an institution and our profession.

Institutions must also stay current with technology and literature regarding academic dishonesty so that they are better equipped to combat new strains of cheating.

Lead by Example: “Faculty must not look the other way, nor take the easy way out, but be firm monitors of the ideals that our code of ethics explains as our special privilege,” stated Dr. Maitland in his article “Disturbing trends in dental education” in the June 2006 issue of the *Journal of Esthetic and Restorative Dentistry*.

In the article by Andrews and others (2007), one student was quoted as saying, “There is a huge double standard implemented by the faculty of my school. They often get upset at us for using old tests to focus our studying; however, they ask us to memorize questions on National Boards to help the classes below us.”

Enforce School Policy: “We must insist on accountability and responsibility. Discipline, when indicated, should be fair, swift, and strong, without the image of weakness and forgiveness,” Maitland (2006) stated. “We not only have to reconnect with honor, we have to send a clear message.”

In the article by Andrews and others (2007), another student was quoted as saying administrations must “actually follow the enforcements that are listed in the handbook for students caught cheating. Come down hard on cheaters; we had ten accounts against the same student in writing and signed...nothing happened.”

We must not back down at the threat of lawsuits or bad press. Doing the right thing may have an immediate negative effect publicity-wise; but not punishing unethical behavior fosters continued unethical actions that will pollute and ultimately undermine an institution and our profession.

Dr. Loftis stated, “When students see other students behaving unethically and no punishment is applied, it becomes harder and harder for students who

struggle in ethical situations to maintain an ethically sound mentality.”

Write New Exams: This applies not only to professors and individual schools, but to the ADA as well. When an exam such as the NBDE I is offered nationwide and can be taken on almost any given day, with a limited variety of tests that are not routinely changed, it is inevitable that students will begin to cheat and write down remembered questions. It only takes one person to start the domino effect. If the tests cannot be changed on a regular basis, it may be beneficial to go back to offering the test twice per year in order to avoid such behavior.

In regard to tests in individual institutions, the suggestion would be to write new exams for each class in order to minimize cheating.

Move to Methods of Testing that Are Difficult to Cheat with: Ideally, students would self-govern and there would be no worry of academic dishonesty. Since that is not the case, we must move to methods of testing that make it difficult to cheat. Andrews and others (2007) reported that students felt that “there should be increased surveillance within the testing area to help discourage cheating. Suggestions include changing seating arrangements, videotaping, or having specific rooms designated for testing.” It was noted that the number of proctors should increase as well.

Institutions must also stay current with technology and literature regarding academic dishonesty so that they are better equipped to combat new strains of cheating.

Continually Teach Professional Ethics in Dentistry: Nash (2007) stated, “The justification for teaching professional ethics in dentistry is to facilitate the personal and professional development of aspiring dentists into socially and professionally responsible human beings.”

Increase Research into the Specifics of Dental Ethics: There are very few studies with scientific backing in the arena of dental ethics and academic integrity. In order for the profession of dentistry and dental education to better understand this pandemic and to verify and pinpoint where the problems lie, we must have correct and specific data. These data will enable the profession to accurately propose and execute solutions.

Notwithstanding the fact that the situation of dental ethics hitherto portrayed may appear disheartening, there is reason to be hopeful. Organizations around the nation are coming together and collaborating in order to find solutions, including organizations such as ASDA, the ADA, the American College of Dentists, the American Society for Dental Ethics, the American Dental Education Association, the Student Professionalism and Ethics Clubs, numerous state dental societies, individual schools, among many others. As stated earlier, we have an obligation to our patients, to ourselves, and to our profession to be ethical in all senses of the word.

In looking back at the Protopappas murder case, the trial notes conclude, “The most troubling aspect of this case is that Protopappas has been convicted of murder for acts committed as a practicing, licensed dentist under circumstances where there can be no doubt he did not truly intend to kill anyone. Certainly every reasonable dentist or physician examining this opinion would agree Protopappas was grossly negligent in each of these three homicides, but where is the evidence of the malice necessary to justify a murder conviction? For the benefit of the concerned dental and medical professional, the answer to that question is simple: this case is highly

unusual and, hopefully, unlikely to recur; for it is the health care equivalent of shooting into a crowd or setting a lethal mantrap in a dark alley” (*People v. Protopappas*, 1988). Protopappas didn’t want or mean to commit the crimes that perchance may have been avoided had he not taken shortcuts in his professional career.

May each of us follow the ASDA Code of Ethics that states that we will conduct ourselves in a manner reflecting integrity and fairness and that we will maintain high standards of moral and ethical behavior. If each one of us follows our code and bands together to speak out against academic dishonesty, our profession will remain one of the most trusted professions in America. ■

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Organizations around the nation are coming together and collaborating in order to find solutions.

ELECTRONIC DENTAL RECORDS IN DENTISTRY

Larry Emmott, DDS

ABSTRACT

A leading consultant on dental practice technology explains the advantages, especially issues of cost in handling paper in the office. A practical approach to replacement of paper as it is used, rather than a comprehensive conversion, is suggested. Common mistakes include converting only part of the office or storing electronic information in different and non-integrated systems.

Is it really possible to go paperless? The best answer to this question is yes...but. It depends on what you mean by "paperless." The goal is not to eliminate all paper. There are many effective uses and needs for paper. However what is possible and highly desirable is to create a paperless dental record or better yet an Electronic Dental Record or EDR.

Many offices have already successfully adapted an EDR. So as Omar Reed famously said; "If someone has done it, it is probably possible." An EDR means that there is no paper folder with patient information. All the charting, diagnostics, correspondence, prescriptions, referrals, financial records, scheduling, and so on is recorded and saved on a computer. There is no paper record.

It has become fashionable on the Internet to refer to traditional magazines and newspapers as "dead tree" media. This of course refers to the many thousands of trees that are cut down every day and used to make paper. If you are using traditional paper charts, then you are using "dead tree" charts. There is a better way.

An EDR is:

- **Faster:** You don't need to go get the chart and re-file it; you don't need to spend time writing the same thing over and over again.
- **Better Organized:** Everything isn't stuffed in a folder but is organized in the electronic chart by default.

That means users can instantly find anything with an electronic search. The chart will never be lost somewhere in an office stack.

- **Less Expensive:** Paper charts and file cabinets for 2,500 patients will cost at least \$25,000 and take up a chunk of office space. A good data server for the dental office will cost about \$3,500, accommodate a lot more than 2,500 patients and take up about a foot of space.

In order to demonstrate the advantages of an EDR let's make an imaginary visit to the traditional dental office of Dr. Paperman.

As a new patient the first thing that happens is that you are handed a brown Masonite clipboard with one corner chipped off. On the clipboard are several forms. The top form is crooked on the page and has been copied so many times it is speckled. A plastic pen is tied onto the clipboard with dental floss. You now tediously fill in the spaces. Name, address, phone number, employer, spouse..... Then you get to the important part, the insurance information. However, you do not understand any of that. Then there are all those health questions. Check off the box and write in the details. Are you pregnant? (Well, if I



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am, my wife will certainly be surprised.) How do you spell infarction? It does not really matter; no one can read your writing anyway. And then sign it.

You then hand the papers back to the front desk. You now get to sit and wait while she then re-enters all this information into the computer. Where is your insurance card? If you brought the card to Judy, the front desk person, she will copy it to another piece of paper. Wait! Don't sit down yet. Take all these papers (lawyers say we need them to protect us from lawyers) and read then sign them. More overcopied, speckled pages. There are a couple of consent forms. A HIPPA privacy form, a financial responsibility form, an insurance release and so on.

Sit and wait while a label is typed and stuck on a file folder. Several other forms are put in there as well, including a tooth chart and pages for future notes. At last, you are allowed to enter the back part of the office. You have not yet set eyes on Dr. Paperman and already you have a chart that contains ten to twelve pages of paper.

THE FUTURE

Eventually we will be able to carry around all our important medical history securely encoded on a microchip, possibly in a smart card. When you visit a new medical office you will not be faced with stacks of redundant forms you could simply swipe your card and all your data will transfer immediately to the office computer and become part of your electronic record

Getting a chart started at Dr. Paperman's certainly entailed a lot of time, paper, and redundancy, but that's not all. The hard costs to create and maintain paper charts can be significant, but we often do not see them because they are hidden in the process of doing business. Paper charts don't just appear in the office for free. The paper folder, the forms, and all the other papers cost about \$3.00 each. If you have 2,500 charts, they cost you at least \$7,500 to create; and every time a new patient walks in, it's another three bucks; cha-ching.

Other chart contents, like x-rays and photographs, can be even more costly. A set of bitewings with film, processing, and mounts can be several dollars. A photo printed from the intraoral camera is \$1.50 or more. It is reasonable to add at least another \$4.00 to the cost of each chart and for all these contents, adding another \$10,000 to the overall office cost.

Storing the records isn't free either. A typical office with 2,500 charts will need three or four full-size lateral files to hold them all. Depending on how nice the files are, they will cost about \$4,000 and could be a lot more. They will take up office space. A 10' x 5' file room will cost \$7,500 to build. That is 50 square feet at \$150 per foot. Not to mention all the "inactive" charts stashed away somewhere else.

So far, our inexpensive paper files are costing us \$29,000, but that is not the total cost. There is the human effort to

Going paperless is a process, not an event.

make the chart, type the label, arrange the contents, file new bits when they arrive in the mail, write the notes, pull the charts every day, and then re-file them. And of course there is the daily ritual of the lost chart, which no one can find—only to have it turn up days later either misfiled or hiding in a stack on the dentist's desk.

So we can see that the paper charting system at Dr. Paperman's office costs a great deal and takes a lot of staff time to create and even more time and effort to maintain in an organized manner.

Once the system to create all the digital information is in place, you simply stop making paper. Everything new is electronic; everything from the past is paper.

How to Do It

There are four ways to turn all the “stuff” we have crammed into our paper folders into digital information that can be stored as part of an EDR. They are listed in this table.

PROCESS	THE PAPER WAY	THE DIGITAL WAY
Enter it	We use paper and pen to write on a chart, fill out a prescription, make notes, or draw on the dental chart.	We use a mouse and a keyboard to enter the same information.
Capture it	We use film exposed to light in a camera or x-rays, which are then processed to create photographs or radiographs.	We use a sensor which is exposed to either light in a camera or to x-rays, which then creates an image on the computer monitor.
Scan it	We take a piece of paper with important information, make a copy, and put the paper copy in the chart folder.	We take a piece of paper with important information and make a digital electronic copy, which becomes part of the digital record.
Import it	We add information we have received from someone else, such as an insurance EOB, to the chart folder.	We never see a paper EOB. We just import this information in a digital format directly to the patient's digital record.

One of the common mistakes dentists make with electronic charting is that they only go part way. Sometimes we miss the obvious, it is the old “can't see the forest for the trees” (dead or alive) thing. In this case, the trees are the individual processes that can be used to create digital information. The forest is the paperless record. If all you see are trees, then you might use an electronic chart for treatment planning but make progress notes on paper. You might install a digital radiograph system and not link it to other records. You might have a computer up front for finances and scheduling but not have computers in the back for charting.

The tendency is to concentrate on individual processes or technologies without integrating the process into the whole. For example, the office may use a paper chart in the treatment room during diagnosis to mark future treatment. Then they take the paper chart to the computer and enter everything again.

They will use the computer to create an estimate, insurance forms, and schedule. Then they will go back to the paper chart to enter procedure notes, back to the computer to take a payment, back to paper for a prescription, back to the computer for the next appointment, then back to paper to check the x-rays. What the office ends up with is a mess. Everything is done at least twice; the paper chart is still needed and no one is ever sure if something is on paper or in the computer. As a result, the computer chart doesn't save time and money, it makes things worse.

Another mistake is to gather digital information, such as photographs, but store it in separate software that is not part of the patient's digital record. To be most effective the digital information must be all part of the same record, either using a fully integrated system or linking each system using computer bridges.

Going paperless is a process not an event. Many dentists believe that in order to go paperless they must scan and convert all their old records. This is a huge, time-consuming, and expensive task with a very limited benefit. Do not

do it. At most you may wish to scan the most recent records of patients who are currently under treatment.

At first you will need the paper charts on all your patients as you will be referring to the previous paper entries. (Note: you won't be making any new paper entries just reading the old ones!) As time goes on you will need to refer less and less to the old, paper records. After a year, all the current x-rays will be digital and all the patients recent entries and treatment plans should be digital. It is now possible to stop pulling charts. The only time you will need to refer to the old charts is for entries or x-rays more than a year old. Eventually you will rarely, if ever, need to pull a chart.

Often the dental office has everything in place to go paperless, but they still make paper just because that is the way they have always done it. Overcoming the inertia of change is frequently the most difficult task of going paperless. The future is coming and it will be amazing! ■

CONVERTING TO ELECTRONIC DENTAL RECORDS

Stephen I. Hudis, DDS

ABSTRACT

The gradual conversion of a prosthetic specialty office to digital format is described. Electronic format and equipment does not create effective office systems; it reflects the existing systems and makes improvement possible. An incremental approach is favored because it is possible to ensure the success and integration of each step and because it does not overwhelm the dentist's and staff's understanding of the practice. In addition to efficiency, office technology has great potential for improving communication, both with patients and with other practitioners. The electronic practice is an opportunity for continuous improvement.

One of the many truths I have learned over the last 15 years is “Digital technology is wonderful when it works, and when it doesn’t...”

For me, converting to digital records has been an evolutionary process over more than a dozen years. One of the first lessons I learned as a Pride client was that computers don’t create systems; they merely replace existing paper systems. If you do not have appropriate systems in place, i.e. hygiene recall, billing, scheduling, etc., do not expect the computer to create them. Once you have good practice management systems and protocols in place, then it becomes relatively easy to digitize them.

Having good paper systems in place also sets a standard against which to measure success. If your paper systems are working, and you have a set of criteria for evaluating them, then it is easy to measure your success in converting to a digital replacement. Office practice systems are the road map that we use to get to our final destination. Without knowledge of what our final destination is, then the road map is useless. It is critical with any system that we have goals and criteria against which to assess whether we are achieving those goals.

Having said that, and presuming that all the relevant systems are in place, the next step is to gradually replace your paper systems. And I use the term “gradually” advisedly. I have a very proactive, self-motivated, and computer-savvy staff. One of the many lessons that my team and I have learned over the years is to

always take small steps. We pick a specific task or system to start with. Next we analyze the components of that system, and look at the technology that we will be using to replace the paper system. We talk about who will take the lead in the conversion, set a timetable, and establish the criteria for goal assessment. Each member of the team focuses on his or her particular aspect of the conversion. Once we are satisfied that the conversion was successful and that we have successfully replaced the paper system in question, we move on to the next task.

It is critical to get a comprehensive view of the entire project. As with any complex treatment plan, it is crucial to have a vision of what the final result will look like. The same rule applies to office systems and protocols. You have to have a clear assessment of your starting point, and a clear vision of what the final product will look like. A list should be made of all of the systems in the office. They would include financial and billing, scheduling, charting and treatment planning, radiography and photography, progress notes, correspondence, and, finally, consent forms, medical/dental



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The times that we struggled were when we tried to accomplish too much at once.

questioners and HIPPA release forms. As you can see, this is quite a long list. There is an immense amount of information here. Attempting to change all this at once is practice suicide. It guarantees that the team will throw their hands up in the air, agree as a group that it won't work, and request a return to paper. I have been fortunate, in that as computer technology and capability have improved, I have added new components to my practice. In hindsight, the times that we struggled were when we tried to accomplish too much at once. In this process, as in life, success usually breeds success. While failure can sometimes provide the best learning crucible, too much failure can doom any project. As the team succeeds, it is important to evaluate that success and what created it. Those skill sets can then be used as the team moves onto the next task.

While I have found that digital technology has greatly improved office efficiency and accountability, it is also an amazing communication tool. We have dual monitors in all of the treatment rooms. When a clinical staff member is taking radiographs, they are visible to the patient on the second monitor. I have an intra-oral camera, as well as a full-sized digital SLR camera. My hygienists are particularly fond of the intra-oral camera. Quite often when I enter the room for a hygiene check I am informed that the hygienist and patient have already discussed a particular tooth, as well as the proposed treatment. Many times I merely offer confirmation and support for my hygienist, and answer

any additional questions the patient may have. Having the patient see what we see, both the radiograph and clinical picture, is a wonderful communication tool. I do not take insurance in my office. When we print a walkout statement for the patient we additionally print a copy of the x-ray and intra-oral photo. This is done from a small photo printer right at the front desk. This serves two purposes. The combination of x-ray and photo has dramatically reduced the number of rejection appeals, and the patient has an additional opportunity to view the proposed tooth. We have lately started taking photos after the preexisting restoration has been removed and the caries excavated. My feeling is you can never document too much, and the intra-oral camera makes it easy.

Patients like to see high tech. It makes them feel that their dentist is current. A number of years ago we created a Web site. At the time, the reason was so that we could have patients do their medical, dental, and HIPPA forms online. That has been a great success. In the privacy of their homes we have found that the forms are filled out more completely. The forms are then reviewed with the dentist and signed in the treatment room. Additional benefits of the Web site have been information and communication. The Web site offers potential patients information about the practice. They can learn about the dentist and the team. They can also learn about

office policies. The Web site can also be used to provide informational links the patient can pursue. As Sy Syms says, "An educated customer is our best shopper." The corollary certainly holds. An educated, informed patient is the patient who makes the wisest choices where health is concerned. There is no such thing as a stupid question.

I stated before that digital imagery was a great communication tool for patients. Another amazing aspect of digital technology is communication with other dentists. It can be a patient that was referred to me by a general practitioner or a patient that I referred to another specialist. Many times I will have a patient in the chair and simply e-mail an image to the other dentist. We can have a conversation while the patient is in my chair. That I find simply amazing, and patients love the convenience and time savings.

The most recent step for us in the process of digital conversion has been progress notes. Many years ago I was banned from writing up charts, as many times even I could not read my own handwriting. Now, most of the progress notes are preset as templates. I simply modify the template, or dictate any additional notes while the patient is still in the chair. I review the note and sign it before the patient is dismissed. The notes are clear, concise, and legible, and because they are locked when they are signed, they are a legal record. This also eliminates reviewing charts at the end of the day. Significant time savings for me.

That leaves only one issue to discuss: hardware. I think dual monitors in the treatment rooms are essential. I also have a consult room with a 20-inch monitor. Allowing the patient to see what we see is the best communication tool. When patients see what we see, they ask better questions and have a much better concept of what is being done for them.

The more you do with computers, the more essential back-up becomes. A dear friend of mine recently had an accident with his laptop and had never done a backup. He explained to me that there were two types of individuals. Those that have always backed up their data and those that back up NOW! I recommend highly against the latter. I have three mirrored drives in my server and do an external hard drive backup every night. Additionally I do a live copy to my laptop every night. This provides me with an additional backup, and if my entire system should go down, it is a fully functioning terminal separate from my network. Finally, if I travel to another office, I can take my entire database with me.

I personally find computer technology to be a wonderful tool in my day-to-day practice. It has been and continues to be a time- and finance-intensive work-in-progress. The more careful and organized we are at setting up the systems and entering the information, the better and more accurate the information coming out will be. ■

While I have found that digital technology has greatly improved office efficiency and accountability, it is also an amazing communication tool.

ELECTRONIC HEALTH RECORD CONVERSION IN A PRIVATE DENTAL SCHOOL

Richard Fredekind, DMD, MA

ABSTRACT

The three-year-plus transition from a partial to a full electronic set of clinics in a dental school is described. The processes of requirement determination, vendor selection, and implementation are described, as well as challenges and benefits. A number of recommendations are offered, including the wisdom of involving, early in the process, all who are affected by the conversion, recognition that different users interact with the clinic differently and therefore have different requirements and expectations, and that some individuals adapt easily to change and others find it more challenging. It is easy to underestimate the resources of time, money, and energy necessary for a conversion to an electronic health record, especially in a multi-clinic organization; but such changes are inevitable.

The University of the Pacific, Arthur A. Dugoni School of Dentistry (Pacific Dugoni) is a private dental school located in San Francisco, California. It has a 36-month undergraduate curriculum and matriculates approximately 140 undergraduate students and 22 International Dental Studies students each year in July. Pacific Dugoni also has three postgraduate programs and a dental hygiene program. There are 14 clinics in the Pacific Dugoni system, all but three of which are located on the San Francisco campus. Approximately 100 staff members and 200 faculty members support clinic operations. Pacific Dugoni treats about 12,000 patients each year in our clinics.

Pacific Dugoni took a half-step toward an electronic health record (EHR) in the mid-1990s when we converted from a nearly 100% paper chart to a chart that was about 50% paper and 50% electronic. The conversion included hard-tissue charting, periodontal charting, procedure tracking, and various business-related activities. Remaining on paper were informed consent, intake documents, routing forms, and the treatment record. Radiographs were all analog and located in a pocket in the paper chart. One of the biggest issues with the legacy system was the fact that it was not a mature system for use in a dental school. The system required ongoing upgrades in order to make it functional in our programs. Report

development was a huge task that Information Technology (IT) worked on extensively. Certain reports that were created were outstanding for the detailed information that was available to faculty and staff members. Nonetheless, the information in many other reports was not trusted by faculty who used them. These issues created challenges in at least three important clinic activities: patient care, student education, and clinical research.

An immature, half-digital patient record created numerous problems for students, staff, and faculty members during patient care. Charts were often misplaced, signatures and entries were sometimes illegible, and there was a lot of going back and forth between the paper chart and the EHR. Frequently, two people needed the same chart simultaneously. Certain patients had different paper charts because they were treated in more than one clinic. For awhile, hard tissue charting was completed in both systems. Students all had their own laptop computers that they had to bring with them to every appointment. All laptops had to be plugged in to the network at a dataport in each operatory. Generally, there were two different systems to manage and each had their own set of challenges.



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Student education relating to information management was archaic and confusing. We were teaching students that it was okay to manage information by using two different systems when in fact it was the least acceptable option. A better option would have been either fully paper or fully electronic. Many students had worked in dental offices prior to matriculating and had experience with mature EHR systems. They were frustrated and confused by the information system at Pacific Dugoni, so this was a significant challenge to our educational program.

Clinical research was very difficult. Projects involving patient health information were tedious to complete using paper charts. It required looking through every chart by hand and extracting information chart by chart. This made it challenging to complete collaborative research at multiple sites and probably prevented those types of research projects from getting completed.

PRODUCT SELECTION

In 2006, the dean charged clinic administration to create a fully electronic health record. Thus began a three-year process of product identification, evaluation, and selection. A working group was formed to steer us through this process and it included clinical faculty and IT staff members.

We first identified all the products that could possibly meet our needs. It quickly became evident that most of them were deficient, primarily because they had no mature grading/evaluation

component required to provide students with feedback. Two products emerged as possibilities: Salud 210 and axiUm. Salud is a product popular in European dental schools, and axiUm is found in many United States dental schools. Vendor representatives from each company spent a few days at Pacific Dugoni presenting the highlights of their products. Approximately 60 faculty and staff members attended these sessions and provided feedback. Other dental schools that use these products were contacted to obtain their detailed impressions about the products. Representatives from Pacific Dugoni visited other dental schools as well to see the systems firsthand. In the end, axiUm was the preferred product and the contract was signed in fall 2008.

The process of product evaluation was an important part of creating buy-in among faculty and staff members. Their direct and active involvement in evaluation of both products enabled them to get an up-close view of each early on. Their feedback enabled clinic administration not only to understand user needs but also to get an idea of how users perceived the project in general. They began to realize how deficient our current system was and how different, and better, another system would be. This created very positive feelings among staff and faculty users about the project in general and momentum for moving the project forward efficiently.

The process of product evaluation was an important part of creating buy-in among faculty and staff members. This began to create very positive feelings among staff and faculty users about the project in general and momentum for moving the project forward efficiently.

IMPLEMENTATION

Implementation teams for Pacific Dugoni's conversion to an electronic dental record system for its clinics.

<i>Team Activity</i>	<i>Team Leader Position</i>	<i>Team Membership</i>
Training	Staff	Staff, faculty, students
Student feedback/evaluations	Faculty	Faculty, students
Hardware/ergonomics	Faculty	Staff, faculty
Dispensing	Faculty	Staff
Charting	Faculty	Staff, faculty
Finance	Staff	Staff
Inventory	Staff	Staff
Technology	Staff	Staff
Patient Services	Staff	Staff, faculty

IMPLEMENTATION

A five-person committee called the Core Team (a mix of IT and clinic faculty) was created to provide primary leadership of the implementation phase of the project. A full-time project coordinator was hired from the software industry to supervise all the phases leading up to implementation and was incorporated into the Core Team. Oversight was provided by the Steering Committee, which included the dean of the dental school and various administrators. The project had a well-defined budget that could not be increased. As shown in the first sidebar, nine different teams managed the various activities of the implementation process, each with an assigned Team Leader. Team membership differed depending on the tasks assigned to that team.

The 12 months before implementation (July 2008 to July 2009) involved a number of phases which needed to be carefully managed and for which the project coordinator was hired. They included identification of existing processes, and modification if necessary; identification of software system requirements; a detailed statement of work that was signed off by appropriate employees; a description of software design; configuration/development;

testing in small clinics; and training of all stakeholders. Each phase was assigned a timeline for completion and the Core Team was responsible for content and timeliness. During the identification of processes, it was discovered that each of the 14 clinics had different business rules, which explains some of the confusion among students who rotated through those clinics. Training was a challenge due to the differences among users in tasks they needed to perform in the system, their experience level with technology, and their motivation to learn. Each group (students, staff, and faculty) had to be trained differently based on those issues.

Implementation of axiUm was scheduled for 13 of the 14 Pacific Dugoni clinics. The Orthodontic program had an existing discipline-specific information system that functioned adequately. Of the 13 other clinics, ten clinics implemented axiUm in July 2009, one in October 2009, and two more in February 2010. The day before implementation began at each clinic, all data from the legacy information system was converted to the new information system. At no time did any clinic run parallel information systems.

CHALLENGES

There were a number of challenges in the implementation of axiUm, including:

- Resources required (time, effort, and money)
- Behavior changes for all users
- Communication
- Change management: habit, tradition, and uncertainty

This was a costly endeavor in terms of time spent, effort expended, and money required. It took three years of sustained preparation before we could implement the system. It will probably take another three years to work out the kinks. All employees had to find

time in their already busy days to work on this project. The number of workforce hours expended is measured in the tens of thousands and the project cost millions of dollars just to implement. Additional costs in support and upkeep will continue indefinitely.

Perhaps the most difficult component of this project was the behavior changes required of all users. We spent hours of time talking with other dental schools that implemented axiUm and they all said this would be a large hurdle. They were right. They said the faculty would be the most challenging population to manage. They were right. It was relatively easy (but time consuming) to select the product, install the hardware, and look at training manuals. It was difficult to get people to change how they function in the everyday tasks attached to information management. Tasks that were especially difficult were financial management of cases, laboratory communications, student evaluation and feedback, and report writing. All of those continue to be resource intensive more than six months after implementation.

Communication was a challenge because it required different information, packaged in different ways, for different stakeholders. Students were provided with unique sets of information based on their learning and patient care needs. Staff members were provided information based on the specific tasks they performed in support of clinic operations. Faculty members were provided information based on educational and curriculum needs and patient care. Communication techniques used in this project included e-mail, small group meetings, large group lectures, teleconferencing and videoconferencing, informal hallway “meetings,” hands-on training, and training manuals in electronic and paper formats. Regular weekly e-mail updates were sent to students, intended to answer questions that came up during the week. Thousands of

workforce hours were spent in meetings and communication, and yet we probably did not communicate enough.

Change is hard and this project required lots of change that directly impacted 450 students, 100 staff members, and 200 faculty members at Pacific Dugoni. Indirectly, it affected 12,000 patients as well. As this project began, people had well established individual habits, the institution and clinic operations had many well established traditions, and the requirement to change those habits and traditions created uncertainty. That, in turn, impacted people in different ways. Some thrived in those conditions and some did not. It was important to figure out who adapted quickly and who struggled with the uncertainty. Thrivers were allowed to move forward with support as they deemed necessary. Strugglers were actively supported as much as possible.

BENEFITS

The benefits of eliminating paper from our clinic operations were expected to revolve around four general improvements:

- Improved patient care
- Improved student education
- Improved faculty research
- Improved staff support

We anticipated that these general benefits would be realized through specific improvements, some of which are listed in the accompanying sidebar. Certain improvements have already been completed six months after the cutover and some are still in progress.

For the anticipated improvements that are yet to be fully realized, there is a range of progress. Accountability and controls are inherent in the information system setup. User adaptation in exercising these controls remains to be completed. Records audits have just begun after extensive reworking of the

PROGRESS TOWARD PROJECT GOALS

Status six months after conversion to an electronic dental record in a dental school context.

<i>Improvement Details</i>	<i>Status</i>
No misplaced charts	Completed
Charts available to two different people at the same time	Completed
No waiting lines at the chartroom window	Completed
Readable entries and signatures	Completed
Better accountability and controls	In Progress
Easier and more convenient records audits	In Progress
Improved capacity for collaborative research using tools like diagnostic codes	In Progress
Timely and more comprehensive student feedback	In Progress
More trusted information	In Progress
A mature information system that required less IT staff resources to modify	Completed
Process standardization across clinics	In Progress
All digital clinic information instead of a combination of digital and paper	In Progress
Common clinic processes	In Progress

Perhaps the most difficult component of this project was the behavior changes required of all users.

audit instrument. Research projects are being developed within Pacific Dugoni and are anticipated to expand to collaborative efforts with other schools. Use of the student feedback instrument is actively progressing in certain clinical departments while others have been stalled. Trust among users will just take time as they use the system. Continued communication among faculty users and IT will ensure report validity and hasten development of trust. Standardization of processes requires changes in behavior among users. Some have adapted faster than others. A very small amount of information is still managed on paper, for example patient intake documents (which are completed on paper, and then scanned into the system) and laboratory prescriptions (which are completed on paper and tracked through axiUm). Both require additional work before we can eliminate their paper component. Lab prescriptions have an additional constraint: the labs are not yet electronic. The creation of common processes across all clinics at Pacific Dugoni continues to challenge us. We have discovered that certain clinics require slightly different processes because of the nature of the providers or the patients who receive care there. However, the goal remains that for most activities, the clinics will function similarly, and for that to happen, people will need to change some behavior. As with other activities requiring behavior change, certain individuals have already made necessary modifications while others have not.

RECOMMENDATIONS

While our institution is different from other organizations, clinics, and private practices, there are certain recommendations that are generalizable in considering conversion to an EHR. The list below summarizes the recommendations.

- Communicate effectively and often with everyone involved in the project, including your family; (they will be sucked into its wake, so make sure they see it coming).
- Have clear goals for the project and keep them in front of you; doing this will help you make correct decisions that improve important issues.
- Adapt quickly and with conviction.
- Navigate uncertainty with understanding and clear direction, and learn how to function with uncertainty for an extended period of time.
- Get buy-in early and confirm it often.
- Expect slowdowns, problems, and disappointments. Manage them immediately and carefully.
- Spend the money necessary to get the best product for your needs, and spend the time necessary to prepare adequately for implementation.
- Name one leader who will guide the project with support from appropriate sources.
- Obtain help from an experienced source and make sure that help spends time in your practice both before and after implementation. Help can also come from other institutions or practices that use the same product.
- Work together.

CONCLUSION

Paperless information systems are here to stay and will increase in number over time. If you have one already, be prepared to upgrade it periodically. If you do not have one, be prepared to jump in someday soon. Most dental school graduates will enter practices with a significant amount of technology experience from both formal and informal sources. A technology-savvy practice will attract the best of these graduates.

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THE DENTAL PATIENT WHO IS “HIGH”

ETHICAL AND SCIENTIFIC RECOMMENDATIONS FOR THE STANDARD OF CARE

Bruce Peltier, PhD, MBA; Lola Giusti,
DDS; Terry Hoover, DDS; Jennifer
Fountain; Jared Persinger, DDS; and
Scott Sutter

ABSTRACT

Patients sometimes appear for dental appointments after consuming alcohol or marijuana. There is presently no consensus standard of care in this area, and dentists vary in their responses to such patients. This paper includes interviews with practitioners and a review of the relevant biochemical and physiological science. The ethics of various ways to handle this challenging situation are examined, and evidence-based recommendations for dental practice are offered. While there is reason for caution, the authors conclude that a blanket “do not treat” policy is unwarranted. Informed consent and transportation safety issues pose significant moral challenges when a dental patient is “high.”

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You are about to begin treatment of a 28-year-old patient when he volunteers the following: “Doc, I want to be completely honest with you. I don’t know if this really matters, but dental appointments make me very nervous, so I smoked a little weed just before I came in. It calms me down.”

The goal of this paper is to begin a conversation that will ultimately shape and clarify the standard of care in dental practice with respect to patients who appear for appointments after consuming alcohol or marijuana. While events like the above are not common in dentistry, they are probably more common than most dentists think, and there is little or no consensus about how they should be handled.

This examination began with the following assumptions, observations, and hypotheses:

Most, if not all dentists will be confronted by patients who present for appointments after drinking alcohol or smoking marijuana. Most people experience mild to moderate fear of dentistry and some patients use one or both of these drugs to self-medicate against anxiety. Some people smoke marijuana or drink alcohol on a daily basis anyway.

Dentists vary significantly in their responses to patients who have consumed small to moderate amounts of

alcohol or marijuana just prior to a treatment appointment. Dentists do not typically have a rational or scientific basis for their practice policies in this area and typically cannot articulate a sound reason for their decisions. Dental school curricula do not address these issues in a direct or systematic way, and most dentists have not investigated the relevant biochemistry or physiology involved with treatment of people who have marijuana or alcohol in their system.

This paper will use the term “high” to describe a patient who smoked a small amount of marijuana or consumed a small amount of alcohol prior to his or her dental appointment (or used both). The term “smoke” or “smoking” refers to marijuana rather than tobacco.

THE SITUATION

The use and prevalence of alcohol in the United States is well-known and well-documented. Data from the Centers for Disease Control and Prevention indicate that 61% of adults drank alcohol in 2006 and 20% have had five or more drinks during the same day on at least one occasion (National Center for Health Statistics, 2008). Survey data typically assert that about 5% of the general population abuses alcohol.

Accurate prevalence data for marijuana consumption is more difficult to ascertain, but it is generally thought that at least 4% of the American public smokes it. California has an estimated 100,000 users of medical marijuana (Okie, 2005), and San Francisco has

more medical cannabis dispensaries than McDonald’s restaurants (Jouvenal, 2005). Marijuana use is not limited to youthful smokers or any single demographic group. The U.S. Department of Health and Human Services recently reported that Baby Boomers still get high. “Those aged 50 to 59 reporting use of illicit drugs within the past year has nearly doubled from 5.1% in 2002 to 9.4% percent in 2007.” Marijuana is the largest cash crop in several American states, including California, and the governor of that state recently called for a formal debate about legalization and taxation of marijuana for recreational use (Buchanan, 2009). Marijuana is here to stay, and trends imply that increased marijuana use in the United States is likely.

These numbers indicate that a metropolitan area such as Denver or Atlanta might conservatively include 30,000 people who abuse alcohol or use marijuana regularly. There are likely to be more than half a million such people in the Los Angeles area. Nearly all of these people have teeth. That said, there is simply no way to know how many people show up for dental appointments after consuming alcohol or marijuana. Many who do so are reluctant to inform their dentist out of embarrassment, fear of legal ramifications, or a fear that they might not be treated if they disclosed. Some patients might not think the information is important, while others may correctly discern that their dentist ought to know. Dentists often feel that they can tell when a patient has consumed marijuana or alcohol, but this is most assuredly not always the case.

The issue of legally sanctioned medical marijuana poses an additional challenge. In some places, marijuana can lawfully be obtained and used with a doctor’s recommendation. Some cancer patients use marijuana on a daily basis as an anti-emetic, and they certainly need regular dental care. One can easily

imagine a situation where a patient legally smokes medical marijuana, falls down, avulses a front tooth, and appears at a dentist’s office for help.

Little formal help or advice is available to dental practitioners. The respective ethics codes of the American Dental Association and component groups such as the California Dental Association (2005) make no mention of the issues described in this paper. One essay by a physician and a dentist in the *Journal of the American Dental Association* even made the following assertion several years ago (McCarthy & Hayden, 1978): “Alcohol is an effective mild sedative for dental therapy when used in suggested dosage, and its use is encouraged.”

It is unlikely that state dental practice acts address this issue. Dental school curricula typically do not cover these challenges in any formal or structured way. Dental students report that faculty members give varying and sometimes strident and conflicting counsel. In short, there is currently no consistent or coherent standard of care regarding treating patients who present for treatment and are high on alcohol or marijuana.

This analysis consists of four parts. The first section is a small, informal qualitative inquiry of dentists that serves to establish baseline information about typical practitioner thinking and behavior. In the second part, the available science is examined. A third section explores practical and ethical issues, and the final section offers recommendations for a standard of care in this area.

A SURVEY: WHAT DENTISTS SAY ABOUT PATIENTS WHO ARE HIGH

Methods: After IRB approval, 24 dental practitioners were interviewed anonymously in the autumn of 2008 using the protocol posted at the end of this paper. A small convenience sample was used,

and the interviewees included ten dentists in private practice, five dental school faculty members, and three students. Two of the faculty members are oral surgeons, and one other is a recognized expert in dental anesthesia. Interviewees practiced or taught in Northern California or Northern Arizona. Students were from the University of the Pacific. Some dentists had been practicing for more than 30 years, while others fewer than ten. They were asked a series of questions (face to face or telephonically) related to patients who present for treatment after smoking marijuana or drinking alcohol.

Results: Virtually all interviewees agreed that they would not treat an uncooperative or belligerent patient. If marijuana or alcohol consumption resulted in a patient's inability to participate competently in the dental appointment from a behavioral or psychosocial point of view, all would decline to treat the patient. Some of the interviewees would offer to reappoint patients.

Most of the interviewees expressed concern about transportation problems. How would this person get home? Would they drive and would they be safe? Would the dentist incur liability?

Some wondered about informed consent. Would a patient who consumed a small amount of an intoxicant be capable of granting real consent? Would they understand the information provided by the dentist? Would their consent be authentic and complete? Most conceded that it would be impossible to make an accurate assessment of these questions, and no one had a clear answer about how to resolve this challenge.

Beyond those issues there was little consensus. Several dentists said that they simply would not attempt to treat someone who consumed alcohol or marijuana prior to an appointment. One younger dentist asserted that, "It is my ethical responsibility not to treat anyone

that I suspect is under the influence of drugs." That dentist also said, "I would dismiss the patient by saying that ethically I am not able to treat patients under the influence of alcohol." Another young dentist responded to the question about a patient who has smoked marijuana by simply stating, "Treat the patient." One experienced oral surgeon stated that, "If I have a patient with prior informed consent and a simple, straightforward procedure involving local anesthesia only, and I find out about recent intake of alcohol or use of marijuana and the patient is fully compliant, I have no concerns over completing the treatment."

Others would treat a cooperative patient who had used marijuana "legally" (with a medical recommendation), but would not treat a patient who was using marijuana illegally. Several thought it would be a good idea to verify the physician's recommendation and document this action. Some said that they would not treat a patient if the procedure would require an injection, and nearly all were extremely wary of the use of IV sedation under these circumstances.

A number of the dentists reported that they would decline to treat patients who were high and would explain their decision to the patient, yet none of the interviewees were clear about the biochemistry involved in treating patients who were drinking or high. While one oral surgeon was concerned about blood pressure and heart rate, none of the interviewees offered a clear, logical, or scientific rationale for their treatment decision. They seemed to possess a vague sense that treatment of such a patient might be contraindicated, but they could not describe the biochemistry that might justify such a decision. Most

It appears that a blanket non-treatment policy is not supported by available science or ethical analysis.

Dental school curricula do not address these issues in a direct or systematic way, and most dentists have not investigated the relevant biochemistry or physiology involved with treatment of people who have marijuana or alcohol in their system.

wondered about the interaction between marijuana, alcohol, and anesthetics, and several speculated that it is more difficult to achieve adequate anesthesia when someone has used “drugs.” Some felt that alcohol or marijuana might “give false readings for blood pressure and pulse.” One reported that he did not know much about the biochemistry and said, “I don’t have a lot of experience with marijuana and all I know is it makes the calculus a different color.” One dentist observed that “usually people who are drunk are unruly and combative.”

Several of the dentists took a defensive stance and were wary of personal or professional “trouble.” If something went wrong, the patient could claim that he or she did not understand or give consent. “Do you want to mess with this sort of problem?” one wondered. Another noted that, “if anything goes wrong...they can come back to you and say they didn’t know what was going on.... So you would be screwed.” One said that “Dentistry is hard enough; you don’t want to deal with another element.” Others were concerned for their own safety and any associated risks to the doctor and staff. One said that he would “throw him out of the office. I can’t put my staff or other patients in harm’s way or be treated disrespectfully.” One said that if a patient (who seemed high) denied use of marijuana, “then I would have him sign something saying he hasn’t used anything and treat him.” One would decline to treat a person who had gotten high and after a second such incident would discharge the patient and carefully document the discharge. One said, “You just give them the office policy. Just say that to become a patient of this office, you have to be sober, and that if we even suspect that you are not sober, we will not work on you because we need a safe work environment.” Another said, “You don’t

have to work on people that you don’t want to. Refer to a specialist or another dentist.” (Is there a specialty for dentists who treat patients who are “high?”) One said, “It is my choice, and always my choice if I treat a patient. It is not the patient’s choice.” Several used the phrase “kick them out of the office.”

Dental students reported that they did not know the biochemistry involved, but felt able to rely on faculty wisdom to back them up in clinic. They expressed the same kinds of concerns as younger practicing dentists did, and one offered “I don’t want him leaving my office and hitting a skateboarder.”

Several older dentists divulged vague anecdotes about dentists who had a courtesy bar in the reception area, dentists who allowed patients to smoke marijuana in the dental office or bathroom, and practitioners who had recommended a shot of brandy (for the patient) before a difficult procedure.

THE SCIENCE

An extensive review of the scientific literature was conducted with a focus on the following questions:

1. What is the short-term impact of small amounts of alcohol on the body, and what are the implications for dental practice?
2. What is the short-term impact of small amounts of marijuana on the body, and what are the implications for dental practice?
3. How do these two drugs affect the process of dental anesthesia? Are there important drug interactions that dentists should consider?
4. What physiological or practical dangers does ingestion of alcohol or marijuana pose to patients in the dental chair?

While this review focused on short-term effects of small amounts of these two drugs, most reports in the chemistry and physiology literature quickly shift focus to the dangers of long-term, heavy use or abuse of these drugs. There is precious little in the literature about the science of situational use of drugs and alcohol in dentistry and medicine.

ALCOHOL AND DENTAL CARE

Alcohol is a central nervous system depressant that affects all organ systems. The long-term impact of heavy, chronic use is well-established and includes prolonged bleeding time and excessive bleeding, hypertension, poor wound healing, higher infection risk, greater likelihood of developing periodontitis and subsequent tooth loss, reduction in salivary flow and buffering capacity, greater risk of oral cancers, worsening of age-related diseases, poor nutrition with glossitis, angular cheilosis, and gingivitis, nutritional deficits, cardiovascular disease, liver cirrhosis, pancreatitis, cognitive losses along with inappropriate social behavior, problems in judgment, and traumatic injuries resulting from falls or fights. A compromised liver cannot metabolize drugs adequately, resulting in elevated concentrations of medicines such as acetaminophen, erythrocine, tetracycline, ketoconazole, phenobarbital, secobarbital, diazepam, lorazepam, chloral hydrate, and opioids. These and other long-term implications are well-described in Friedlander, Marder, Pisegna, & Yagiela (2003).

The problems associated with consumption of a small amount of alcohol are somewhat more complex. While much is unclear about low to moderate doses of alcohol, the following effects are generally accepted in scientific literature:

- Alcohol's action as a positive allosteric modulator of GABA (Gamma-Aminobutyric Acid) causes relaxation, relief from anxiety, sedation, ataxia, disinhibition, and an

increase in appetite (Mehta & Ticku, 1988; Wallner, Hanchar, & Olsen, 2006)

- The release of endogenous opioid peptides (endorphins and enkephalins) results in feelings of pleasure (Friedlander et al., 2003; Froelich, Badia-Elder, Zink, McCullough & Portoghesi, 1998)
- Drying of the mouth (which might actually be helpful in some dental treatments)
- Synergistic or additive effects with CNS depressant medication
- Impairment of coordination
- Cognitive difficulties, including diminished ability to focus attention and diminished executive function, planning and problem-solving capacity
- Lowered social inhibition, altered judgment
- Harmful impact on cardiovascular disease and possible adverse interactions with the medications used to treat these problems
- Mild sedation, resulting from a small to moderate amount of pre-appointment consumption of alcohol that may actually benefit a patient (McCarthy & Hayden, 1978, p. 285)
- A variety of clinical effects following two glasses of red wine, including increases in sympathetic nerve activity, heart rate, pumped blood volume, and blunted ability of the brachial artery to expand in response to blood flow (Spaak et al, 2008)
- Problematic interactions with the following medications used in dentistry (Friedlander, et al, 2003):
 1. Cephalosporins and metronidazole: possible accumulation of acetaldehyde with headache, palpitation, and nausea
 2. Erythromycin: decreased absorption and diminished effectiveness

3. Tetracycline: increased absorption and plasma concentration in healthy subjects
4. Penicillins: possible decreased efficacy
5. Ketoconazole (anti-fungal): possible accumulation of acetaldehyde with headache, palpitation, and nausea
6. Barbiturates and benzodiazepines: enhanced (and potentially dangerous) CNS depressant effect
7. Chloral hydrate: significant increase in CNS depressant effect
8. Opioids: marked increase in sedative side effects

Alcohol affects people quite variably. Some people are nearly incapacitated by two drinks, while others seem unaffected by several. Many chronic drinkers can function rather well after consuming one or two drinks, and observers are often unaware that such a person has been drinking at all. Some people become combative when drinking, while others get happy and sedated. Some become more talkative and others more quiet. Alcohol puts some people to sleep and agitates others. The effects of drinking can also vary from day to day in the same person, resulting in little impairment on one day and significantly more impairment on another. Low doses of ethanol are likely to have a greater impact on the aged.

Self-report of drinking behavior is also problematic. People often do not accurately assess or report their drinking, either for lack of memory or social embarrassment. The very definition of a

“drink” is variable from person to person, even though there is substantial agreement in scientific and law-enforcement circles that one drink is defined as .5-.6 ounces of ethanol or 1.5 ounces of 80 proof (40%) liquor or 5 ounces of wine (11-14%) or 12 ounces of 5% beer. While scientists agree on a definition of a “drink,” one never knows what consumers really mean when they report that they had “a drink or two.”

MARIJUANA AND DENTAL CARE

Like most drugs, marijuana poses acute and chronic risks to the oral health and overall physical health of the consumer. While long-term effects of heavy chronic use have been studied (National Institutes of Health, 2009), there is little of substance to be found in the scientific literature about safe dental treatment of a patient who is high.

Research in this area is extremely challenging. First, it would be difficult, if ethical, to conduct experimental studies that would generate information of definitive value. Subjects cannot be required to smoke marijuana in order to see if dental anesthesia or procedures are harmful. We are therefore resigned to animal studies and the use of less powerful correlation methods and anecdotal self-report. Second, it is difficult to quantify marijuana dosage, since density and type of cannabinoid is so variable in the weed smoked by consumers. Most laboratory research uses pure THC (tetrahydrocannabinol) which is quite likely to contain chemicals different from those found in typical marijuana joints, resulting in differing effects and outcomes, along with challenges to external validity (Jones, 2002; Amar, 2006; Bornheim & Grillo, 1998). Finally, since marijuana use is typically illegal

and considered by many to be antisocial, consumers are understandably reticent to be open or honest about its use.

A review of the literature reveals that marijuana has been shown to have the following general effects on its users (Gregg et al, 1976; Nguyen, 2004; Horowitz & Nersasian, 1978; Hernandez, Birnbach, & Van Zundert, 2005; Cho, Hirsch & Johnstone, 2005; Beaconsfield, 1974; Jones, 2002). In that much is unknown about how marijuana affects the human body; the following list of effects is not complete or definitive:

- Short-term memory impairment
- Sympathomimetic activity concomitant with parasympatholytic activity (both act to increase heart rate with increased output at low to moderate dosages)
- High doses can have the opposite effect, inhibiting sympathetic but not parasympathetic activity, resulting in possible hypotension and bradycardia
- Acute anxiety/panic attack
- Analgesic effects
- Drying of the mouth (which might actually be helpful in some dental treatments)
- Widespread vasodilation (as much as 50%) and subsequent increase in heart rate to maintain blood pressure (reflex tachycardia) of 20% to 100% starting in the first 10 minutes after smoking and lasting several hours
- Increased oxygen consumption—up to 30% (Nguyen, 2004)
- Possible inhibition or metabolic alteration of many other drugs (Bornheim & Grillo, 1998)
- Patients have delayed reporting of angina due to the analgesic effect of marijuana (Cho, Hirsch, & Johnstone, 2005)
- Euphoria and dysphoria
- Mild sedation and relief of mild anxiety (potentially helpful in dental care)
- Mood-intensification (marijuana is not a pure CNS excitant, euphoriant, or depressant)

- Paranoid or manic states, confusion, disorientation, even hallucinations with some users
- Impaired thinking and judgment
- Athymhormia (loss of motivation or initiative)

Precious little research has focused specifically on marijuana and the dental experience, and most of that was done in the 1970s. The literature consists of scattered case reports and informed anecdotes describing potential pitfalls. Here is an overview of what research and case reports have to say about potential problems when a dental patient has smoked marijuana.

The most widely reported concern is dose-related tachycardia (Gregg et al, 1976).

Transient hypotension has been reported (Gregg et al, 1976). Evidence related to induction of arrhythmia is conflicting. Some studies imply the possibility, while others were unable to find such evidence (Gregg et al, 1976; Nguyen, 2004; Jones, 2002). A possible risk of ischemic problems secondary to vasodilation and elevated heart rate has been reported (Nguyen, 2004; Cho, Hirsch, & Johnstone, 2005).

The most important effect of CBD (cannabidiol) is that it interferes with drug metabolism by inactivating the hepatic cytochrome P450, responsible for metabolizing more than 60% of clinically prescribed drugs, including lidocaine, macrolide antibiotics, antidepressants, antihistamines, benzodiazepines, and others (Bill, Clayman, Morgan, & Gampper, 2004; Bornheim & Grillo, 1998). The clinical significance is that the concentration of drugs in the system can rise to hepatotoxic levels if P450 is inactivated. Interactions with drugs that dentists prescribe might include anticholinergic/parasympatholytic agents (e.g., atropine) used to control

salivation. This process can exacerbate tachycardia and hypertension (anti-cholinergics already increase heart rate), while opioids may produce mutual potentiation of effects (Seamon, Fass, Maniscalco-Feichtl, & Abu-Shraie, 2007).

Marijuana has properties that can potentiate immunosuppression from systemic corticosteroids which could slow healing or risk infection (Seamon et al, 2007).

Darling & Arendorf (1992) observed that “oral surgical procedures on subjects intoxicated with cannabis may result in acute anxiety, dysphoria, and psychotic-like paranoid thoughts—all intensified by the stress of surgery.” The effects include upper-airway irritability, chronic cough, bronchitis, emphysema, bronchospasm (Hernandez, Birnbach, & Van Zundert, 2005).

The actual interaction between THC and dental anesthetics is not well understood. Studies reveal a complex interaction between the physical and psychosocial stress of procedures, epinephrine, and THC. An analysis of research on the impact of THC and epinephrine on dental patients is frankly inconclusive. It is difficult to attribute the tachycardia documented in studies by Horowitz and Nersasian (1978) and Gregg and others (1976) to either a stress response or a strict drug-drug interaction. Nguyen summed up the situation in her 2004 paper, concluding that “the interaction between anesthesia and the use of cannabis is still poorly documented.” (p. 5).

Several studies revealed that marijuana is not an ideal dental medication by itself, either for pain relief or anxiety. In one oral surgery study, ten subjects given diazepam, THC, or placebo rated high-dose marijuana as the worst pre-medication, associating it with the most pain. Those receiving marijuana also had higher anxiety inventory scores (Gregg et al, 1976).

TREATMENT CONSIDERATIONS BASED UPON AVAILABLE SCIENCE

When a patient reports that he or she has “had a drink,” one can never be certain about what this statement really means. For some people, one drink can mean a large tumbler of vodka. It is also impossible to determine reliably from reports of today’s use of alcohol what the history of long-term use might be. Most serious drinkers minimize their reports. A dentist inclined to treat such a person should make explicit inquiries about the amount consumed and history of consumption (and any other drugs taken at the time), should explain relevant dangers, and should offer to reappoint that patient. This interaction is best conducted in a way that does not unnecessarily embarrass patients and might include assurances of confidentiality, as appropriate.

Complex procedures that involve sedation should probably be postponed, as the possibility of a dangerous drug-drug interaction is real. There are known synergistic effects when alcohol and central nervous system depressants combine. Dentists should review medications (listed earlier in this paper) known to interact with ethanol, discuss possible interactions with patients, and prescribe appropriately. Patient cardiac history should be given special consideration with a drinking patient, as alcohol can have an adverse impact on cardiac functioning and can result in adverse interactions with cardiac medication.

As with alcohol, it is virtually impossible for a dentist to discern how much THC is present in a patient’s body. Patients do not even know the answer to this question, as the ingredients in marijuana joints vary wildly. Since THC

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metabolites remain in the system for extended periods of time, a dentist never really knows if he or she is treating a patient with some THC on board. There is a recommendation in the literature (Horowitz & Nersasian, 1978) that patients abstain from marijuana for one week prior to a dental appointment, but the science supporting such a recommendation is insubstantial.

Patient cardiac history should receive special consideration with a patient who uses marijuana given the risk of ischemia, myocardial infarction, or TIA in susceptible patients.

When treating someone who uses marijuana, consider avoiding epinephrine-containing local anesthetics or use as little epinephrine as possible to achieve adequate anesthesia if immediate treatment is essential and effective local anesthesia of sufficient duration cannot be achieved otherwise. Since local anesthesia with epinephrine works longer and better, a patient may experience more discomfort when using local anesthesia without epinephrine and thereby induce a significantly greater endogenous production of just that: epinephrine. Planned pharmacosedative appointments should be rescheduled due to risk of synergistic effects of marijuana and sedatives leading to excessive CNS depression. Before injecting local anesthesia, aspirate well to minimize direct vascular injections and the possibility of excessive tachycardia. If possible, avoid IV sedation and especially general anesthesia for at least three days following marijuana consumption, due to airway and postoperative heart rate concerns. Airway obstruction and oxygenation issues lead to a preference of local anesthesia over general anesthesia.

Never prescribe atropine or other parasympatholytics to a patient who has recently used marijuana. Warn patients against risk of combining opiates or benzodiazepines with marijuana, especially if they are to drive an automobile. Consider reappointment if patient's heart rate is elevated or if the patient seems groggy or heavily "stoned." Dentists need to make an independent decision about whether to treat someone who shows behavioral signs of intoxication or incapacity to effectively participate in care. It is recommended not to treat a patient who prefers to take a break to consume more marijuana (during the appointment). This patient must be counseled about excessive use, dependence, and available addiction treatment.

Ethical Issues

The scenario of greatest interest in this paper is the one where such a patient is mildly high and completely cooperative. Issues will be examined using a principle-based approach, a utilitarian model which weighs competing interests, and Ozar and Sokol's (1994) "central values" method.

THE PRINCIPLE BASED APPROACH

In this view, bioethical normative principles are accessed as a guide to right behavior.

Nonmaleficence: The American Dental Association's *Principles of Ethics and Code of Professional Conduct* states that, "This principle expresses the concept that professionals have a duty to protect the patient from harm." It seems clear that if treatment of someone who is high poses any physical or psychological danger to that patient, it would be wrong to treat. Such harm might also derive from a patient's inability to recall postoperative instructions, although practitioners could follow up in such cases. Harm could also come from post-treatment transportation danger should a patient attempt to drive a car.

Beneficence: Dentists strive to do positive good for patients. This matter becomes complicated when a dentist could do good by treating a patient who needs treatment, but also does not wish to harm that patient. A clear moral dilemma occurs (when two principles conflict) when a high patient falls, knocks out a tooth, and then rushes to the dentist for help. A similar, more likely scenario is the case of the chronic, daily user of alcohol or marijuana who needs serious dental care. Must such a patient resolve his or her addiction before receiving dental care? Should addicts be excluded from dental treatment entirely? It must be noted that it is unrealistic to ask many addicts to refrain from substance use for even short periods of time, and that people diagnosed with alcoholism (“alcohol dependence”) often meet criteria for impairment under the Americans with Disabilities Act. This does not imply, however, that dentists must always treat patients who have consumed alcohol or marijuana just prior to treatment. Beneficent action in this case may involve a referral to an addiction resource.

Justice: This is the “fairness” principle, and it advocates that people be treated equally; that each receives his or her “fair share.” On a practical level this principle requires equitable distribution of treatment resources. Some parties are not arbitrarily favored over others, and the criteria for any uneven resource allocation must be transparent, reasonable, and relevant. In the current analysis it seems unfair to decline to provide treatment to people on the basis of personal habits (if those personal habits do not conflict with treatments for clinical reasons). It also seems wrong to refuse treatment to a patient because they suffer from an addiction.

Veracity: This principle insists on truth-telling. Obviously, the optimal patient-dentist relationship is characterized by honesty. However, if it is unrealistic to insist that addicts refrain from use, and dentists make it clear (as some did in their interviews) that they will categorically refuse to treat someone who is “high,” then lying certainly seems like an attractive option to an addict with a toothache (or periodontal disease or other serious dental problems). On the other hand, are dentists being completely truthful when they tell patients that they refuse to treat them because of concerns for that patient’s welfare if the dentist does not actually know the related biochemistry and the reality of physiological danger? It seems more honest to tell patients that the biochemistry is unclear, that the dentist is uncomfortable with the ambiguity and chooses to err on the side of safety. This insight may establish a foundation for effective communication and open the door to a conversation that aims to solve the problem in a practical way.

Autonomy: Both parties—dentists and patients—possess autonomy, the right and duty to self-govern. Patients can certainly choose to show up high for a dental appointment, but they have no right to be treated under those circumstances. Such a right would imply that dentists have a duty to treat them. Obviously dentists may also choose to exercise professional autonomy and decline to treat. In fact, if dentists have good reason to believe that it would be dangerous or wrong to treat a high patient, they have a duty to decline.

The principle of autonomy forms the basis for informed consent, as patients can only consent when they are making an informed decision. A patient must be able to participate in treatment decisions—not just at the beginning of treatment—but on an ongoing basis. As there is no way to assess the level of comprehension

of a high patient, it is reasonable if not imperative to question the ability of such a patient to comprehend, remember, and participate adequately.

THE UTILITARIAN OR VALUES MAXIMIZING APPROACH

This method compares the interests of various relevant parties, along with potential harm and benefits to those parties. The parties include patients, dentists, dental team members, and anyone else who might benefit or be harmed. In this analysis, the term “interest” is used synonymously with the concept of a “stake” or share in the outcome. Interests, in this usage, are always self-interests.

Patient interests: Patients have the following interests related to the questions at hand:

- Getting adequate dental care, especially in emergency situations
- Experiencing comfortable dental appointments and treatments
- Receiving treatment that is safe; not being subjected to harm or danger
- Maintaining dignity and self-esteem
- Being informed of risks and benefits so they can take responsibility for their oral health

Dentist interests: Dentists have the following interests:

- Maintaining a viable private practice and going concern
- Maintaining their dental license avoiding lawsuits
- Feeling comfortable in their practice decisions and treatments

Staff interests: Members of the dental team have the following interests:

- Working in a safe and interpersonally comfortable environment (which may include training for difficult patient interactions)

If, in fact, there is little physiological danger, then the patient's interest in experiencing adequate dental care in a comfortable way seems to clearly outweigh the dentist's concerns about danger to the practice, avoiding lawsuits, and comfort in his or her decisions.

If a dentist is uncomfortable treating a patient only because that person is unlawfully consuming a substance that is illegal, would not that also mean that such a dentist should refuse to treat tax cheaters or patients who cheat on their spouses? Should dentists refuse to treat all people who do illegal things? If dentists are uncomfortable treating addicts per se, shouldn't they also be uncomfortable providing dental treatment to tobacco addicts or even to compulsive gamblers? If dentists are unwilling to treat addicts, how will addicts get dental care? Are they to be excluded from dental care?

THE CENTRAL VALUES METHOD

This third model of decision-making involves a hierarchy described in Ozar and Sokol's 1994 book *Dental Ethics at Chairside*. Ozar and Sokol assert that every profession has a small number of essential, defining values. These values are ranked in a hierarchy and must be honored in the order they are ranked. A lower-ranked value cannot take precedence over a higher one. The central values of dentistry, according to Ozar and Sokol, ranked from most important to least, are:

1. The patient's life and general health
2. The patient's oral health
3. The patient's autonomy
4. The dentist's preferred patterns of practice
5. Esthetic values
6. Efficiency in use of resources

This hierarchy highlights the importance of accurate scientific information about danger. If consuming small amounts of alcohol or marijuana endanger a dental patient, that patient should not be treated, or the situation must be managed in a way that is not unsafe. A patient's life and general health trump all other values.

If, on the other hand, marijuana or alcohol does not endanger a patient, the next value on the hierarchy must be honored, and that is the patient's oral health. This model insists that a patient's oral health takes priority over a dentist's preferred pattern of practice. This means that, absent physiological danger, dentist have an obligation to treat patients of record who are "high," assuming that they are cooperative and able to participate. Indeed, this model even implies that a patient's choice to get high prior to a dental appointment (assuming physical safety and ability to adequately participate) also trumps a dentist's practice preferences. These ideas obviously conflict with the widely held belief of dentists that they have a more or less absolute right to treat whomever they please and to decline to treat patients whenever they choose to do so. In fact, the ADA's *Principles of Ethics and Code of Professional Conduct* asserts in section 4.A. ("Patient Selection") that dentists "may exercise reasonable discretion in selecting patients for their practices." Once a person becomes a "patient of record" in a practice, however, that practice has certain treatment obligations.

Given that the highest ranking value is the patient's life and general health, it seems that dentists have an obligation to assess for addiction and to attempt to influence or refer patients (for addiction treatment) who simply cannot show up for a dental appointment without getting high. It would be unethical to sidestep this issue completely.

If patient autonomy is to be honored, patients must be capable of making reasoned, informed decisions about their treatment. This is problematic for the patient who is high because informed consent is an ongoing process and not a one-time event at the beginning of treatment or even the beginning of the treatment appointment. Changes that occur during treatment sometimes require new decisions.

In addition, Ozar and Sokol's hierarchy, as well as the ADA *Code* (dentists are "obliged to make reasonable arrangements for emergency care") clearly imply that dentists cannot simply "dismiss" a patient of record who presents with a dental emergency but is high. With such patients the question of what constitutes "reasonable arrangements" becomes somewhat complex and important.

RECOMMENDATIONS FOR A STANDARD OF CARE WITH COMMENTARY

It appears that a blanket non-treatment policy is not supported by available science or ethical analysis. Patients should be considered on a case-by-case basis, with special attention to medical or dental conditions that could put a high patient at special risk, along with informed consent challenges and transportation issues.

In addition to this general conclusion we propose the following recommendations for development of a standard of care.

1. Dentist's Point of View:

Practitioners should examine their attitudes toward alcohol and marijuana use (and addiction in general) and decide whether negative moral attitudes have an appropriate role in treatment decisions. It must be noted that Ozar and Sokol's Central Values Hierarchy places a patient's general

and oral health (as well as patient autonomy) above the dentist's preferred practice patterns. On this basis, it is unethical to assert that addicts and those who show up for an appointment high should categorically be denied dental care.

2. **Professional Autonomy:** Despite the assertion above, there is no legal or ethical requirement that dentists provide treatment to a patient who presents with marijuana or alcohol in their physical system. Similarly, there is little reason to attempt to treat someone who is uncooperative or surly. However, our review of the biochemical and physiology literature allows a case to be made that dentists should consider treating someone who consumed alcohol or marijuana prior to a dental appointment. This assumes that such a patient is completely cooperative and able to participate in care. There are, nonetheless, significant challenges to this assertion.
3. **Informed Consent:** This may be the most challenging ethical aspect of all. Persons whose cognitive capacity is impaired cannot give real consent, as they are unlikely to fully understand the situation and may not be capable of prudent judgment. Dentists are not trained in assessment of cognitive capacity, nor are they expected to be expert in this area. How are they to determine whether a patient is capable of understanding and consenting? This problem could be ameliorated to some extent by discussions at a time when the patient is not impaired, combined with written or video information that a patient could study at home. The more significant challenge, however, derives from the fact that informed consent is not a one-time event that only occurs prior to the onset of treatment. The

informing and consenting process is continuous throughout treatment, as new decisions are often made along the way. One might note that a patient who is sedated cannot effectively participate in this process no matter what drug was used to produce sedation. In any case, anticipation of treatment changes or options is important at the onset of care (e.g., when treating extensive or deep carious lesions).

The matter of capacity to understand postoperative instructions is also challenging, although this can be ameliorated to some extent with clear written instructions and a subsequent telephone call. Oral surgeons often send groggy patients home after IV sedation, typically accompanied by a competent companion.

4. **Transportation:** Dental practitioners must decide whether to participate in a patient's decision to drive home from an appointment. Again, this decision depends upon the dental staff's ability to make a sophisticated decision about cognitive and psychomotor competence. But there is a lot at stake in this decision, and it is a decision that must be made even if a dentist decides not to treat a patient they believe to be impaired. It seems immoral to send a patient home in their automobile after telling them that they will not be treated because they have smoked marijuana or drunk alcohol. Another challenging situation arises when a patient refuses assistance and insists on driving a car after being told they could not be treated. Do you call the police?

Practitioners should examine their attitudes toward alcohol and marijuana use (and addiction in general) and decide whether negative moral attitudes have an appropriate role in treatment decisions.

Appendix: INTERVIEW PROTOCOL

- A. Hand your subjects the list of clinical scenarios (below) and ask them to read them.
- B. Here are some suggested questions and triggers for discussion:
1. Pick one of the scenarios on the list and tell me how you would handle it in clinical practice.
 2. What were you taught about such situations in dental school or afterwards?
 3. Do you think that there are medical-physiological aspects that must be considered?
 4. Do you think that your colleagues would treat such situations in the same way that you would?
 5. What do you think is the standard of care in such situations?
 6. Under what circumstances would you turn a patient away or refuse to treat them (relative to the scenarios on the sheet)?
 7. Do you know if there are laws that must be considered in these scenarios?
- C. Clinical Scenarios
1. Have you ever treated a patient who showed up for the dental appointment after having consumed alcohol or smoked marijuana or taken any other drug, prescribed or not? If so, what did you do?
 2. What were you taught in dental school about this problem or issue?
 3. What do you think is the standard of care in this situation?
 4. Can you think of any biological or pharmacological issues that need to be considered?
 5. Can you imagine any behavioral issues that might be involved?
 6. What would you do if a patient showed up for an appointment next week and they smelled of alcohol or marijuana or told you that they had used those drugs before they showed up at your office? Do you have a policy or protocol?
5. **Assessment of the Patient:** Patients should be queried about the quantity and time of consumption prior to an appointment. This discussion will be easier when the practitioner views alcohol and marijuana from a medical-dental point of view rather than as a moral shortcoming, and it is essential that practitioners educate patients about the confidential nature of the doctor-patient relationship. Practitioners should always consider the possibility that patients underreport the amount of alcohol or drugs consumed. Patients are much more likely to be honest and forthcoming about their use of marijuana if they possess an accurate perception of how the information will be used by their dentist. (Some patients will be concerned that their dentist might call law enforcement should they disclose illegal marijuana use.) Such a discussion can help practitioners make the determination between small or moderate use versus high levels of consumption. Dentists should also query the patient about the possibility of other medications taken prior to the appointment. The most significant risk of the high patient has to do with the combined effect of alcohol and CNS depressants along with the complex effects of alcohol on the liver's ability to metabolize medications. Other medications combined with ethanol (prescribed or not—especially CNS depressants) have additive or synergetic effects. These additive effects can be unpredictable.
- Dentists must also obtain and maintain an accurate health history for all patients. Cardiac and blood pressure issues are of special importance in dealing with the drinking or smoking patient. Obviously, a patient's report of

alcohol or marijuana consumption should be noted in the clinical record, and it seems fair to alert patients of that documentation.

Dentists and other dental practitioners are not the only parties with ethical duties. It should also be noted that the role of dental patient involves certain well-accepted responsibilities. Most practitioners and patients would agree that patients have a duty to show up for appointments ready, willing, and able to competently and safely participate, although this duty is certainly mitigated from time to time by medical emergency or cognitive incapacity.

6. **Clear Policy:** Practitioners, clinics, and dental schools should consider written policies that urge patients to disclose the use of prescription and recreational drugs (explicitly mentioning alcohol and marijuana along with accurate assurances of confidentiality). The policy should be discussed with all patients early in the treatment relationship. Written statements should be crafted carefully so that they do not discourage addicted patients from seeking dental care, especially since addictive drug use often damages gums and dentition.
7. **Monitoring Vital Signs:** As a general practice, dentists should monitor blood pressure and pulse rate regularly. Do this more frequently with known users of marijuana, alcohol, or other drugs.
8. **Older Patients:** Special attention must be paid to older patients since smaller amounts of alcohol can have a more deleterious effect. Aged people often take numerous prescription medications, and it is difficult to know how alcohol and other drugs will interact, especially in relation to age-related conditions such as cardio-

vascular disease, strokes, and the medications used to treat them. Note also that older patients sometimes smoke marijuana.

9. **Enhanced Dental Education:** The biochemistry, physiology, and ethics related to treatment of patients who use alcohol or marijuana should be taught explicitly in the dental school curriculum. Clear, scientific explanations should be provided. Where science is inadequate, students should be told as much. Dental students should not simply be told “do not treat these patients.”
10. **Development of Protocols:** Ongoing professional discussion of these topics is required in order to develop clearer treatment protocols for dentistry. A coherent, science-based consensus standard of care in this area is much needed.
11. **Knowing What to Say:** And finally, how should one respond to that high patient? Here are two possible responses to the patient’s comment at the beginning of this report:
 - A. If the dentist decides not to treat this high patient:

“Thank you, Mr. Patient, for letting me know. You’re right, that is important information. While the science isn’t conclusive about the matter, I don’t believe it’s a good idea to treat someone who is high. Let’s see if we can work together to schedule appointments when you do not have marijuana or alcohol in your system. If you will be unable to come to dental appointments without smoking marijuana I will not be able to provide your dental care. I want to make sure that your treatment is as safe as absolutely possible. What do you think?”

- B. If the dentist decides to treat this patient:

“Thank you, Mr. Patient, for letting me know. You’re right, that is important information. If it is simply not possible for you to show up for appointments without smoking marijuana, I will try to work with you. Please keep me informed about your intake. I will closely monitor some important medical signs to ensure that your dental care is as safe as absolutely possible. With that said, it would be best if you use as little as possible when you have a dental appointment, and I am going to insist that you have a companion here to help you get home safely. We also have to make certain that you are absolutely clear about the treatments, the options, the risks, the alternatives and any possible changes we anticipate.” ■

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Evil GAMES

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ABSTRACT

A defining characteristic of humans is our capacity to create a better world through mutual action. Traditional ethics attempts to define and impose the one or several things we should all want. The alternative argued here is that we can retain our individual definitions of what matters and still work together for mutual improvement. Agreeing on common ethical principles is not a precondition for an effective moral life. This approach to morality is based on game theory, which holds that in purposely social interactions: (a) there are basic understandings, (b) individuals pursue their own interests, (c) we can judge others' interests, and (d) the distribution of benefits and burdens depends on the joint action of individuals, not on the action of individuals in isolation. In this view, immorality becomes a matter of cheating in the game of life. The three primary forms of cheating are deception (misleading others into thinking they are playing a game other than the one that is to their advantage to play), coercion (blocking courses of action others would normally be entitled to), and reneging (playing the game and then dodging the payoff if one does not like the outcome). These three evils are illustrated by Shakespeare's plays *Othello*, *Richard III*, and *Antony and Cleopatra*.

We can learn a lot about ethics by watching the play of children ages four to eight.

It is not because that is the age when some are getting good ethics from their parents and others are not; most children that age are really clumsy in their relations with others and many or perhaps most have strong tendencies toward being brutish. What we can learn comes from the fact that they struggle so much and have yet to learn the arts of concealment. They tip their hands about how they think people should get along.

Imagine a four-year-old building with blocks or zooming a toy airplane around the kindergarten room. Often these acts are accompanied by sound effects; they appear to have a structure. The blocks and the plastic object (even if it is only the small plastic rake from a beach set that stands in for an airplane) are elements in an imagined world that gives them some sort of meaning. One child is building the tallest structure in the world or a wall to keep out creatures of an indescribable nature; the other is setting a speed record, showing off wonderful aerobatics, or even experiencing some form of kinesthetic thrill.

Despite their verbalizations, their playing in the same space, and even their acknowledgment of the others' presence, they are playing together only in a contrived sense. Psychologists call this parallel play. There is no thought of reenacting the World Trade Center disaster, because the block builder and the plane zoomer are in different worlds.

As children grow, they acquire the ability to include images of others in the contextual world that surrounds their play behavior. In Bob Dylan's lyrics, "I'll let you in my dreams if you let me in yours." Semicooperative games emerge later, such as "cops and robbers" and tea parties or pretend family episodes. These are still largely private activities (hiding from others and arranging one's things), but the presence of others and their influence on the meaning of the game is acknowledged to some extent. Personally, I never could understand how we resolved those disputes in cops and robbers where I claimed to have shot my buddy, but he said I missed. I think a major reason we were able to carry on was that he relished the opportunity to play out dying in a spectacular fashion. Little girls seem to find some way to continue when there is disagreement over whether the baby (doll) is hurt or sad or something else. The balance between private but interlocking worlds that provide the context for public actions is an essential skill and the foundation for our norm of "plays well with others." This is the foundation for morality.

As we mature, we continue developing interpretative frameworks for our behavior that allow both our own and important others to participate in our worlds. Eventually we accumulate a full repertoire of these frameworks, slightly

different ones for different circumstances, that permit us to function effectively in many contexts where other folks are also working within the parameters of their frameworks. A good marriage or a good patient-dentist relationship means that we can count on the other to behave in a fashion that will not challenge or damage our own way of proceeding and vice versa. Friendship is a special case where we believe our friend will sustain the interlocking frameworks in situations that have not been tested yet or will even go out of their way to preserve the relationship when our behavior appears a bit dodgy. But we never escape parallel play. Consider all the individuals who believe they have gifted hands, would be strong candidates for elected office, think they have a great sense of humor because they pass on others' jokes to their e-mail list of friends, or fantasize that there will be more than a few readers of long papers on dental ethics.

These functionally interlocking frameworks are not exactly the same as norms, as in the sense that the ADA *Principles of Ethics* is based on normative principles. Norms, and even more so rights, are abstract, universal, and reciprocal expectations for behavior. It is a normative principle that everyone will exhibit veracity or truth telling at all times—whatever that means and whatever is entailed if it should not occur. By contrast, a mutually sustainable interlocking moral framework is a foundation that permits joint behavior that honors the dignity of each party. That is the moral foundation for social life.

The view that morality is based on interlocking frameworks rather than external, universal principles does not lead to categorizing behavior as “acceptable” or “unacceptable,” as in the case in

much of law. Hitting another person in the face as hard as possible is not wrong if one is a boxer. Taking another's money is not wrong if one is operating a gambling establishment. Causing orofacial pain is only wrong under certain circumstances. It is the behavior in mutually overlapping contexts that matters. In England, operating on a patient is legally a battery, absent informed consent. Otherwise it may be acceptable if one is licensed to do so and the action conforms to the standard of care.

The frames that provide the context and foundation for social moral behavior need not be identical across individuals. A dentist may think he or she completed a spectacular restoration while colleagues and patients judge it to be merely acceptable. Even this difference is moral to the extent that none of the parties would choose to do anything else given full knowledge of the situation. A dentist who charges 10% above “fair market value” for a restoration that the patient would be willing to pay 20% above par to receive, is moral, provided that the patient and others have not been tricked into believing that this is a low price, that it is the only alternative the patient has, or that the work is anything less than what it is said to be. It is the overlap, not the identity, of frameworks such that a common behavior is acceptable to both parties that makes it moral. Universal normative principles would be an acceptable alternative foundation for morals provided that there are no disagreements over which principles matter, which take precedence in cases of conflict, and how they apply in particular situations.

MORAL GAMES

The ideas presented above are background to the view that moral behavior can be understood in terms of game theory. It is certain that children are recognized as responsible citizens to the extent that they learn how to play games well, including the master game

of pursuing their own interests while simultaneously allowing others to do the same. The Western Liberal tradition, as embodied in the Declaration of the Rights of Man, makes the highest ideal to maximize each individual's welfare consistent with a comparable opportunity for all others to do the same. The large question in ethical philosophy has been how to bring this about. This essay proposes that we look to game theory for one answer.

CHARACTERISTICS OF GAMES

Set aside notions that games are intrinsically trivial, only involve head-to-head competition between individuals fighting over the same prize, or the deviousness of “gaming” the system. Game theory is a well-developed discipline that crossed the fields of decision science, economics, and ethics. Four features define a game:

Understandings: Some behaviors are appropriate and others are not. Agreement on process need not be the same for all players. For example, insurance companies are exempt from certain anti-trust regulations that hospitals and dentists must follow. In certain cases, those who “break the rules” are penalized. If they accept the penalties they have not broken the rules, they have just made a calculated move. Civil disobedience and requesting a late filing for income taxes are examples. When understandings are really broken with an intent to avoid detection or sanction, it amounts to a redefinition of the game.

Payoffs: Outcomes are associated with payoffs, one set for each player. Both the associate and the senior dentist can expect to benefit from a practice agreement if the relationship is successful and one or both can expect to suffer if the practice does not thrive. So-called “zero-sum games,” where the available benefits are fixed and one person cannot

win unless the other loses, are contrived and not that common. Certainly both patient and dentist expect to benefit from each appointment. The progress of mankind over the centuries is clear testimony that, in the aggregate, we have been playing games where the typical person can expect to move up.

Predictable Goals: It is a necessary condition of games that all players are “in to win.” Normally, this can be taken to mean that each person seeks to maximize his or her own interests. There is currently debate in scientific circles over how to handle altruism—a consistent pattern of behavior that seeks to advance the interests of others with no clear apparent advantage to the altruist. All that is necessary for game theory is an understanding that players seek to maximize a recognizable goal in some consistent fashion and that the best interests of others can be predicted to some extent. For example, Mother Theresa could be counted on to fight for the interests of the poor in Calcutta. The reason for the requirement that goals be predictable is that cooperative and competitive behavior presupposes some ability to understand how others are playing. This is what children learn as they move from parallel play to responsible adult behavior. It is also why one cannot have a conversation with a madman.

Joint Outcomes: The lynchpin of game theory is that outcomes cannot be controlled by either player alone. It is the joint action of all concerned that determines how the payoff will be distributed. Dentists may wish for the optimal oral health outcomes for patients who lack resources or personal values to engage in care, but they cannot necessarily make it happen. Patients may want excellent oral health but not be able to find a dentist near enough or honest enough to provide that kind of treatment, but they cannot necessarily make it happen. It is only when the joint actions

of parties coincide such that neither party would be better off doing anything else that we get the results we want. (This criterion of joint best outcomes such that neither party would be better off doing anything else is called “equilibrium”—an important technical term in game theory) For this approach to moral behavior, no individual can be ethical in isolation. Regardless of a high code that is carefully followed, pious recluses have either created an imaginary world where they win by their private rules or they are just lucky to have surrounded themselves with like-minded individuals who probably carp about the others who “don’t get it” or may even have coerced others into taking their word for how things are.

IN WHAT SENSE ARE GAMES ETHICAL?

The game structure provides a useful way of looking at various approaches that have been taken toward ethics.

The most common approach by far to building ethical theory is built on suggesting to others that one or another set of payoff values should be preferred by everyone. The ADA *Principles of Ethics* is based on this notion. Other things being equal, it is better that people help others, avoid harming them, tell the truth, distribute benefits and burdens fairly in society, and allow others to make up their own minds about things. Here is the rub: this set is proposed as being the set of values that all should adhere to. That makes the principle of autonomy (everybody gets to make up their own mind) sound a bit hollow. Even such an obvious candidate for a worthy outcome as great oral health may not place high among all Americans. Most have nothing against it, but prefer food on the table or flat-screen TVs. It

The balance between private but interlocking worlds that provide the context for public actions is an essential skill and the foundation for our norm of “plays well with others.” This is the foundation for morality.

may be sound to operate as though rational individuals act based on what they believe to be a consistent set of values, but it is not as obvious that the values are or even should be the same for everybody, or if so who gets to decide on what they should be. Perhaps the fact that we are still struggling with our master list of universal values (best payoffs) after 2500 years of debate is an indication that this is not the best strategy.

Another approach to ethics has been to emphasize rules and rights. “First ensure that everyone has a basic level of health care and then distribute the rest by some algorithm” and “it is illegal to accept insurance payment as payment in full and waive copays” are examples. So is the Golden Rule: “Treat everyone as if he or she has the same values I do.” These are cases where the rules of the game have been set by third parties. It is not unethical to ignore such rules; it is, however, immoral to ignore them while claiming to honor them and to expect the benefits that would be given to those who follow the rules.

The branch of ethical theory known as contractarianism leans heavily on the part of game theory concerned with self-interests. Thinkers such as Thomas Hobbes, Adam Smith, and the modern day David Gauthier, and to some extent John Rawls, make a strong case that individuals are better off in the long run working together than individually. We are thought as a society to acknowledge some form of “social contract” where we can assume that it is in everybody’s own best interests to agree on certain minimal rules. As attractive as this idea is, it is embarrassed by the persistence among us of free-riders, con artists, and quacks and charlatans. A variation on this

approach from self-interests is evolutionary ethics. E. O. Wilson and Brian Skyrms are examples of philosophers who argue that it is hardwired into individuals as survival instincts that we prefer to cooperate, especially with those in our family or with our friends.

For me, the key to moral behavior is not in arguing about the rules and the prizes, but in the play of the game. Some people agree to the operational understandings, and even self- and other-interested joint play, but they cheat. They pretend to be playing one game while in reality they are playing another. They block other’s options in ways that violate the spirit of the game. Some people even play by the rules and then fail to abide by the consequences of their losing. Failure of morality, on my view, is not a matter of having different values or different ethical theories, nor is it a matter of declining to play the game that others find enjoyable. Immorality comes down to playing, but playing dirty.

The remainder of this essay is devoted to a discussion of the three principal flavors of immorality understood as cheating on the game of life. Each will be illustrated through a discussion of one of Shakespeare’s plays.

DECEPTION

In a perfectly transparent game, the understandings and payoffs are fully understood and each player has a reasonable way of anticipating what is in the best interests of the other. In deception, a player attempts to gain an unfair advantage by distorting the way the game is understood. If, for example, a dentist fails to mention that posterior composites have a shorter expected serviceability than amalgam restorations in the same area, the patient will likely make the wrong choice, even when following a perfectly logical decision process. By

“wrong choice,” I mean that they would conclude that their interests were best served by a different action if they had available all the information they could reasonably have expected. A patient may attempt to deceive a dentist about his or her need for pain medication or intent to follow through on treatment or payment for care. Distorting others’ understanding of the game of life for personal advantage is immoral; it is deception.

A classic example of game theory occurs near the beginning of Shakespeare’s *Othello* where the Venetian war council is debating how to employ their great general Othello against the Turks. It is known that the Turks have assembled a large fleet, but it is not known for certain whether the attack will be made against Rhodes or against Cyprus. Most of the field intelligence coming in suggests Rhodes as the target. The Venetians decide to send their fleet to Cyprus. There are four potential outcomes: (a) The Turks attack Cyprus and Venice defends it—a probable and important victory for Venice; (b) the Turks attack Cyprus and Venice defends Rhodes—a major strategic blunder; (c) the Turks attack Rhodes and Venice defends it—just a check on the Turks; and (d) the Turks attack Rhodes and the Venetians defend Cyprus—a clean but small win for the Turks. Overall, the best strategy for both armies is to attack Cyprus [see the recommended reading on game theory to understand why that would be the case]. But the Turks attempt to disguise their intentions by pretending an attack on Rhodes, just as the Allies did in World War II by signaling an invasion at Calais rather than Normandy.

The Venetians solve the problem by looking at the four outcomes and asking “What is the most stable outcome based on both party’s real interests, rather than their professed actions?” This is not the best outcome for either party: instead it is the best joint outcome for the parties, the best one could hope for

assuming that the other is seeking to maximize their interests. Both fleets meet off Cyprus in a great battle, a victory for Venice, that is alluded to between Acts I and II of Shakespeare's *Othello*.

The plot of the play is introduced in the first speech of the play where Iago, Othello's aide-de-camp, is fuming over being passed over for promotion and vows revenge against his general. This is achieved by Iago deceiving Othello into believing that his wife Desdemona is unfaithful. In the progress of the play, Iago ruins the personal fortune of a friend and the reputation of the man Othello promoted instead, and he prompts Othello to kill his wife and commit suicide. Throughout all of these maneuvers, he acts indirectly through rumor, false evidence, and promotion of suspicion. The word "honest" appears 54 times in the play. Twenty times Iago is described as honest by others, nine times he describes himself as honest to others, and nine times he privately mocks honesty, as in the line "Honesty's a fool." In a word, Iago offers to play one game in public while actually playing another to his own advantage. He is deception personified.

Iago eggs a friend and former suitor of Desdemona to engage Cassio (Othello's new lieutenant) in a drunken fight in which Cassio accidentally wounds an innocent bystander. Othello places Cassio on probation. Iago convinces Cassio to plead his case through Desdemona, thus raising suspicions in Othello's mind over Desdemona's affections. These suspicions are fanned by disguised professions of Cassio's innocence from Iago, who reluctantly reports rumors that cannot be verified ("Cassio was overheard mentioning Desdemona in his sleep") and exaggerated pictures of the shame that would come to Othello if Desdemona were not honest (a play here on the phrase "an honest woman"). Iago tricks

Cassio into boasting about his affairs with his mistress, Bianca, which Othello is led to believe are references Desdemona. Iago also succeeds in getting a handkerchief that Othello has given to Desdemona and placing it in Cassio's room, knowing that its eventual emergence will be misunderstood. In each case, Iago succeeds in substituting a counterfeit game structure that proves disastrous for those who act on it.

Following are nine examples of deception in Shakespeare's *Othello*:

- Desdemona deceives her father by eloping with Othello.
- Iago enlists Roderigo's help by promising to win Desdemona's affections for him using money Roderigo gives Iago.
- Othello is accused of using witchcraft to win Desdemona.
- The Turks feint toward Rhodes when the real target is Cyprus.
- Iago sets up Cassio for a drunken fight, estranging Othello from Cassio.
- Iago sets up Cassio to plead his case through Desdemona, thus making it appear that there is a deeper relationship between them.
- Iago uses suspicion of possibility and consequences of infidelity, then unconfirmable rumors, then possibility of future "proofs" to make Othello jealous.
- Iago arranges a misleading interview and discovery of handkerchief as "proofs."
- Iago persuades Roderigo to ambush Cassio.

Cheating is a sometimes misunderstood example of deception. The act of breaking into a faculty member's office to copy the answer key is an invasion of

A good marriage or a good patient-dentist relationship means that we can count on the other to behave in a fashion that will not challenge or damage our own way of proceeding and vice versa.

privacy, and getting a friend to take National Boards to report content coverage and some answers is an abuse of friendship. The cheating comes from attempting to deceive others (faculty or boards) about the meaning of the test scores. So is upcoding, incomplete informed consent, failure of full disclosure in contract negotiations, and telling part of the story on access and other public health issues.

COERCION

In a fair game, parties are free to choose among a set of alternative courses of action sanctioned by society at large. There should be no constraints on us that do not apply to others in similar situations. We should be autonomous individuals. Coercion is the unjust manipulation for personal benefit of the actions open to others. Papoose boarding is often regarded as coercion. So are sexual harassment, withholding services, and threatening nuisance lawsuits.

Use of force is not necessarily coercive if it is understood to be part of the encounter between parties sanctioned by society in such circumstances. Aristophanes' play *Lysistrata* is a case in point. The women of Athens sought to limit war by withholding sexual favors. It was the women who engaged in coercive behavior essentially by doing nothing, and the play is properly understood as criticizing, not praising, the women. In football, physical force is expected as a means of advancing one's ends. But there are rules about which kinds of force are coercive and which are allowable.

Shakespeare's *Richard III* is a study in coercion. Based on the historical figure, Richard, Duke of Gloucester, the last king in the Plantagenet line founded by William the Conqueror, Richard usurped

the English crown for the years 1483–1485. Shakespeare's version of history is substantially without foundation, but the Bard credits Richard with seven murders, including the deaths of his adolescent nephews, and the seduction by force of several women. Richard's problem was that he wanted to be king, but was fourth in the line of succession behind his two older brothers and the sons of his oldest brother. The oldest brother, Edward IV dies of natural causes, although in somewhat confused circumstances. In Shakespeare's view, Richard had facilitated this death and the second brother's drowning in a wine vat in the Tower of London, and later he detained the nephews in the Tower and ordered them killed. He had several members of a rival house arrested and then killed, and even had one of his own faction arrested and executed when he got cold feet. The women were cowed into submission by physical threats or promises of sharing power. And in all cases the women were the mothers or former wives of men Richard had dispatched.

The deaths in battles caused by Richard and his brothers were not coercion, but the fortunes of war. The murders were coercion. Consider the case of Richard's brother—the one drowned in the wine vat—who was ordered to the Tower by the oldest brother and later pardoned. Richard was entrusted with the written pardon, but converted it into a warrant for an execution. Clearly the options normally open to the second brother were altered to Richard's advantage. There is no coercion involved in arresting, trying, and (if found guilty) executing individuals. The coercion came in the form of omitting the trial. This is a fundamental right in Western society today; it was an even more fiercely defended privilege among the medieval nobility. Killing was not the problem; killing without an opportunity to defend oneself was. It removed an option—trial by a jury of one's peers—

that one was entitled to by birth. A similar violation of normal freedom by coercively cutting off freedom involved his ordering violation of sanctuary in churches in arresting one of the nephews.

Following are 12 examples of coercion in Shakespeare's *Richard III*:

- Inflames hatred between Edward IV, his brother the Duke of Clarence, and Woodville faction and prevents their attempts at reconciliation blocking normal relations among them.
- Prevents pardon from Edward IV of his brother from reaching jailors in time to prevent his execution.
- Arrests and then executes Rivers, Grey, Vaughan, and others without warrant or trial.
- Authorizes violation of sanctuary laws.
- Confines young princes to the Tower, thus depriving them of natural support.
- Frames and executes Hastings without warrant or trial and falsely represents a confession to the Mayor when the dead Hastings can say nothing in his own defense.
- Spreads rumors of bastardy of young princes when credible witnesses are dead or silenced and there is no time to verify the claims.
- Denies access of parents and grandparents to their children in the Tower.
- Orders secret execution of young princes.
- Gets rid of inconvenient wife, Lady Anne, in order to marry another.
- Causes Queen Margaret's curses to be drowned out by drums and trumpets.
- Holds friend's son hostage.

Coercion exists in dentistry, principally through denying patients access to options that would normally be available to them for promoting their health. A common example involves presenting treatment plans that cover only those

options the dentist prefers. All overtreatment is coercive. It generally takes the form of creating the impression of a threat of ill health that can apparently only be mitigated by a single course of action. Coercion would exist in insurance contracts if there were an attempt to enforce conditions that had not been agreed to or were not available to others. (Being legally forced to fulfill the terms of a bad contract is not coercive.)

RENEGING

The third major way to cheat on the rules of the game of life is by not following through on promises made about outcomes. It has sometimes been said that in a liberal Western society, each of us is free to do whatever we choose, as long as we are willing to accept the consequences. What is not okay is to agree to play a game and then change one's mind when the results turn out to be unfavorable. A free dental exam that turns out to cost something is renegeing. Running for election to an office in organized dentistry and is an example of renegeing, as is bad debt.

The difference between deception and renegeing is when the decision to cheat is made. In deception, the mutual game is distorted from the very beginning, or at least prior to commitments to action. Renegeing occurs after the outcomes of the joint action are known or are apparent. When agreeing to a treatment plan, the patient may have every intention of following through with appointments and other behavior and on payments. But the picture looks different after the first steps are taken. And in fact, the world has changed and it may not be so obvious that follow-through is so advantageous. No dental student ever came to school three days in a row wearing the same clothes and exuding the same respect that was evident in the admissions interview. And few individuals treat their spouses now the way they did while courting.

Order in civil society depends on our being able to count on the world not changing moment to moment to satisfy our temporary advantage. It is doubtful that we owe anything to a fool or a mad man, despite our having given our word. But we do owe it to ourselves and to those we care about not to engage with those who can be expected to renege. Alcoholism or any other addiction is a case of self-renegeing.

The study case for renegeing in Shakespeare's work is *Antony and Cleopatra*. The story is well-known and the play follows history rather faithfully. The setting for the play builds on earlier events. Julius Caesar was assassinated, in part, because of a fear of concentrating too much power in a single individual. Following his death and a short civil war, the empire was ruled by a triumvirate based on dividing the empire into three administrative sections with an agreement to share the spoils. The triumvirate included Mark Antony, Lepidus, and Octavius (also known to us as Octavian or Caesar Augustus). A holdover from the former power group, Sextus Pompey, was a powerful military pretender to power. Mark Antony was married to Flavia, who, by successive marriages, became a great power broker. But Antony, who was responsible for the eastern part of the empire, took up with Cleopatra—at least long enough for them to have two children together. It is at this point that the play commences. On Flavia's death, Antony returned to Rome to present a united front to the outsider Pompey and there married Octavius' sister, Octavia, as a political bargain. Antony abandoned Octavia and Octavius unilaterally did away with Pompey and then Lepidus. This sets the stage for a showdown between Antony and Cleopatra on one

Universal normative principles would be an acceptable alternative foundation for morals provided that there are no disagreements over which principles matter, which take precedence in cases of conflict, and how they apply in particular situations.

Failure of morality, in my view, is not a matter of having different values or different ethical theories, nor is it a matter of declining to play the game that others find enjoyable. Immorality comes down to playing, but playing dirty.

hand and Octavius on the other. In the first major battle at Actium on the east coast of Greece, Antony unwisely chose to fight at sea because Cleopatra had provided many war galleys. In the heat of battle, the Egyptians fled. Antony made a later stand near Alexandria, but was again abandoned by the Egyptians and other partners. Antony killed himself when he learned that Cleopatra had committed suicide. But she had only spread this rumor and was negotiating with Octavius. In the end she did inflict a deadly snake bite on herself when she came to believe that Octavius would not honor his negotiated power sharing deal.

The most outrageous example of renegeing in the play is the Egyptian fleet failing to engage the forces of Octavius at both Actium and Alexandria as promised. Antony's marriage to Octavia is also representative example of renegeing. He accepts the benefits of this game (political stability with a handsome opportunity for spoils in the east) but fails to honor his end of the bargain. Antony freed a slave, Eros, in his youth and made him promise to kill him if necessary to preserve Antony's honor. The freed slave went back on his word, killing himself instead. Cleopatra's death is yet another example. She negotiated a treaty with Octavius but denied him the opportunity to celebrate his victory.

Following are 12 examples of renegeing in Shakespeare's *Antony and Cleopatra*:

- Antony is accused by his generals of forsaking his responsibilities in war and statesmanship for pleasures with Cleopatra.
- Antony resolves to leave Cleopatra and return to Rome.

- Octavius accuses Antony of renegeing on his promise to provide arms in times of war.
- Antony marries Octavia for political reasons but abandons her, retuning to Cleopatra.
- Treaty of Misenum between Pompey and the triumvirate broken unilaterally by Octavius.
- Octavius deposes Lepidus.
- Cleopatra's fleet flees in battle of Actium.
- Cleopatra negotiates with Octavius, and although he appears to accept her terms, she kills herself instead.
- Some of Antony's army defects after Actium, more kings defect before the battle of Alexandria. The Egyptian fleet defects for a second time at Alexandria.
- Enobarbus, one of Antony's best generals, defects.
- Cleopatra counterfeits her death.
- Eros kills himself rather than Antony, as he was duty-bound to do.

There is a subtheme in *Antony and Cleopatra* that corresponds to a branch of the academic discipline of moral philosophy as games. This is the topic of coalitions and the human tendency to shift our allegiances to those combinations we feel will best serve our interests.

The theory of coalitions is very simple: individuals choose among individual games and team games played with various partners with a view toward joining the game that offers the greatest advantage. Attractive coalitions may cease to look so good based on changes in our own situation, modifications in our partners' positions, and especially through alternations in the coalitions we are facing. Recall that a key tenant of game theory is that we alone cannot determine what is morally appropriate. Prior to the battle of Actium, when Antony announced that he would fight at sea to take advantage of the apparent strength of his Egyptian partner, some of

the generals in Antony's army deserted to Octavius because they calculated their benefits as being most promising if they added their land armies to Octavius than if they added their armies (of minimal value in a sea battle) to Antony.

Cleopatra was a master at shifting her allegiances to the winning coalition. Enobarbus was one of Antony's generals who shifted coalition partners, but he discovered he had made a mistake in doing so and then committed suicide.

Health care in America is an especially rich field for studying the effects of shifting coalitions. There is a compelling reason for this situation. The amount of health care needed in America exceeds the resources available to address it—by a very large extent. The only wise strategy is to form coalitions in an effort to control access to the most lucrative patients. Winning coalitions spend money to prevent rule changes. And because the imbalance between need and resources is so great and because there are so many players, very small changes in the rules provoke coalition changes.

Dental practitioners must choose the form of their practice, especially the level of care and extent of insurance participation. The dogmatic approach to ethics tends to pit one group of practitioners against others who attack each other's principles. Practitioners join or shift coalitions because they believe they can improve their interests. They sometimes switch sides when their practice circumstances change, for example when they have paid back the large debts they have encumbered in purchasing a practice. Access to care can also be viewed as a coalition issue and the current thinking is that the profession's interests are best served by not entering into any coalitions at all unless other groups form that could destabilize the game.

CONCLUSION

If we lived solitary lives, there would be little concern for ethics—certainly no possibility of discussing them. It is inescapable that as social beings who make choices based on potentially overlapping visions of life we (a) roughly learn and follow agreements, (b) cherish our values of what is worthwhile, (c) make generally useful assessments of what others value, and (d) earn the blessings and burdens of life collectively—based in large part on mutual behavior. In a word, we play the game of life. This view does not require that we convince others what is right or wrong before we can play. But it does require many years to learn to play well with others. Because social relationships are complex, we play many such games simultaneously, and in most contexts we are satisfied with workable approximations of playing the same game.

All of us cheat a little, but each of us believes we are basically ethical. There is no inconsistency here. This is like saying that Dr. Perspicacious is a master orthodontic diagnostician; but we expect that Dr. Perspicacious does other things during the day, such as eating, chatting with the office staff, dancing the Macarena, and occasionally muffing a diagnosis.

The point of this essay has been to make a case for evil games. It is possible to characterize specific kinds of mutual goal-directed social behavior that should be avoided because this damages individuals and damages the groups in which such immoral behavior occurs. An evil game is not the same thing as one an individual is apt to lose. All of us have been dealt losing hands in various aspects of our lives. The evil comes from not playing the game fairly. Deception is a form of cheating at games by creating or allowing others to form unrealistic views of what is at stake in the game; for someone else's advantage, victims of deception are seduced into playing

games that differ from the ones they believe they are playing. Coercion is evil because it manipulates, for someone's unfair advantage, the structure of a game by denying others actions they would normally be entitled to. Reneging is evil because it perverts the payoffs, again from someone's advantage, after the game has been played.

What do these forms of cheating have in common that makes them so evil? In all cases they diminish the dignity, autonomy, and distinctly human characteristic of others. As far as science knows, humans are the only life form capable of mutual, future-oriented volition. The great ethical philosopher Immanuel Kant overlooked a fundamental point when he argued that human beings should true their moral compasses to universal reason. Mankind is not *homo rationalis*. The Great Scots Adam Smith and David Hume were closer to the mark by offering a morality for *homo sapiens*. We are the unique sapient species, meaning that we are interconnectedly volitional, that we are capable of making and executing common plans, and that we are sensitive to what others want. Only humans are capable of playing the game of life. The definition of immorality is to cheat at it so as to cheapen not only the game but also those who play it. ■

RECOMMENDED READING



Although there are many introductory books on game theory, most people find the material technical in nature. There are summaries of two texts available. There are also summaries of the three plays by Shakespeare discussed in the essay. Each is about four pages long and conveys both the tone and content of the original source through extensive quotations. These summaries are designed for busy readers who want the essence of these references in 20 minutes rather than five hours. Summaries are available from the ACD Executive Offices in Gaithersburg. A donation of \$15 is suggested for the set of summaries on behavioral economics; a donation of \$50 will bring you summaries for all the 2010 leadership topics.

Heap, Shaun P. Hargreaves and Varoufakis, Yanis (1995).

Game Theory: A Critical Introduction*

London: Routledge. ISBN 0-415-09403-8, 285 pages, cost unknown.

Difficult but effective introduction to game theory, beginning with normal form games (two players selecting alternative, one-off actions independent of each other), the concepts of equilibrium (neither player has an incentive to choose otherwise) and common knowledge of rationality (ability to predict what others consider to be in their best interests) are discussed. Dynamic games (extensive form games) are discussed next, being games where players alternate moves and gain knowledge from other's previous moves. The Nash bargaining solution is presented as the most fair way of dividing shared benefits and burdens. The Prisoner's Dilemma and other famous games, including evolutionary ethics, are also presented.

Gauthier, David (1986).

Morals by Agreement*

Oxford, England: Oxford University Press. ISBN 0-19-824992-6; 367 pages; about \$20.

Moral action is analyzed in game-theory terms. It is assumed that perfectly rational and fully knowledgeable individuals recognize that cooperation offers each person better prospects than does the state of nature, where it is "every man for himself." An economic model is first considered in which each participant selects the strategy that ensures a maximal

return based on the assumption that others will attempt to minimize what is available. This can be improved upon by agreeing in advance to some principle for fairly sharing the common surplus in society. Gauthier's libertarian views show through at times.

Shakespeare, William

Summaries include historical context and characters, plot, description of action by scene, and list of examples of theme for each play.

- *Othello*: Deception
- *Richard III*: Coercion
- *Antony and Cleopatra*: Reneging



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