Tijuana Cancer Clinics in the Post-NAFTA Era

Ralph W. Moss, PhD

This article contains observations and historical considerations on cancer and complementary and alternative medicine (CAM) in the Tijuana, Mexico, area. There are approximately 2 dozen such clinics in Tijuana, some of which have been treating international cancer patients since 1963. Among the first clinics to be established were the Bio-Medical Center (Hoxsey therapy), Oasis of Hope (a Laetrile-oriented clinic), and a series of clinics affiliated with the Gerson diet therapy. These original clinics were established mainly by American citizens in response to increased regulation of nonstandard therapies in the United States, particularly after passage of the Kefauver-Harris Amendments to the Food, Drug and Cosmetics Act in 1962. In the 1970s, the Tijuana clinics proliferated with the upsurge of interest in Laetrile (amygdalin). By 1978, 70,000 US cancer patients had taken Laetrile for cancer treatment, and many of those had gone to Tijuana to receive it. The popularity of the Tijuana clinics peaked in the mid-1980s. Although many new clinics opened after then, a dozen have folded in the past 10 years alone. The turning point for the clinics came with passage of the North American Free Trade Agreement (NAFTA), which facilitated greater cooperation among the antifraud authorities of Canada, the United States, and Mexico. In 1994, the tripartite members of NAFTA formed the Mexico-United States-Canada Health Fraud Work Group, or MUCH, whose brief is to strengthen the 3 countries' ability to prevent cross-border health fraud. Under the auspices of MUCH and its members, regulatory crackdowns began in earnest early in 2001. The clinics were also badly affected by the general downturn in travel after 9/11. If these trends continue, many Tijuana clinics are unlikely to survive. Some suggestions are made for how the Tijuana clinics could be reorganized and reformed to minimize the likelihood of governmental actions and to maximize public support. Such reforms center on 5 main areas: (1) research, (2) physical plant, (3) finances, (4) ethics, and (5) education.

Keywords: *cancer; Tijuana; Mexico; clinics; Laetrile; amygdalin; Gerson; Hoxsey; herbs; dendritic cells; NAFTA*

In September 2004, I visited 7 Tijuana-area clinics on behalf of my company, Cancer Communications, Inc, of Lemont, Pennsylvania, which provides information on treatment options for cancer patients. I have visited 17 other Tijuana clinics on 5 previous occasions between 1976 and 2001. Through on-site inspections; interviewing doctors, patients, and treatment advocates; and reviewing written materials, I have been able to form a comprehensive picture of the Tijuana clinics that treat cancer using the methods of complementary and alternative medicine (CAM; Table 1).

In 2002, Dr Alfredo Gruel Culebro, the Mexican official responsible for overseeing health facilities in Tijuana, estimated that there were between 30 and 70 unregulated or underregulated clinics in Baja California.[1] The fact that a responsible official could offer only such an imprecise estimate is itself emblematic of the difficulties faced by any outsider who attempts to obtain reliable information on this largely undocumented phenomenon.

While some clinic directors cooperated fully in this article, others shunned an independent inquiry. A few deliberately cultivate anonymity, preferring not even to have a nameplate on their door. This is not a new development: on a previous fact-finding visit, a clinic director halted an interview when she learned of my connection to the US National Institutes of Health (I was then an adviser). More recently, the spokesperson for another clinic refused to answer even the most elementary questions when I said that I was writing an article for a medical journal. (There is deep suspicion of "attack journalists" among some clinic owners.)

The Tijuana Clinic Phenomenon

For more than 40 years, US patients have sought and received treatment at the Tijuana-area clinics. While the majority of these facilities are located in Tijuana itself, there are also clinics in the outlying communities of La Mesa, Playas de Tijuana, and Rosarito Beach.

The first such clinics came into existence because of the changing medico-legal climate in the United States, which made it increasingly difficult for nonconventional practitioners to offer patients alternatives to the standard cancer treatments (surgery,

RWM is at Cancer Communications, Inc, Lemont, Pennsylvania.

Correspondence: Ralph W. Moss, PhD, Cancer Communications, Inc, PO Box 1076, Lemont, PA 16851. E-mail: questions@cancerdecisions.com.

DOI: 10.1177/1534735404273918

Table 1. Tijuana Clinics Presently Treating US Cancer Patients*

Name of Clinic	*Principal(s)*	*Founded*
Alivizatos Program (at International Bio Care)	Rodrigo Rodriguez, MD	1994
American Metabolics Institute/Hospital San Martin†	William R. Fry, Geronimo Rubio, MD	1987
Baja Nutri Care	Luz Bravo, MD, Alicia Melendez, MD	2002
Betania West‡	Salvador Vargas, MD	?
Bio-Medical Center/Hoxsey Therapy	Liz Jonas, Donna McCright	1963
The Center for Holistic Life Extension	Dr Luis Velazquez	1989
Centro Hospitalario Internacional Pacifico (CHIPSA)	Ron Carreño, MD	1990
Hospital Bajanor-H.E.L.P	Dr Carlos Alessandrini	1990
Hospital Santa Monica	Kurt Donsbach, DC, Humberto Seimandi, MD	1983
IMAQ	Isai Castillo, MD	1984
Ingles Hospital	Professor R. Bradford; A. Garcia, MD; S. Rodriguez, MD	2002
Institute of Chronic Disease§	Gustavo Andrade, MD	?
Insulin Potentiation Therapy Clinic	Donato Perez Garcia, III, MD	1988
International Bio Care Hospital and Medical Center	Rodrigo Rodriguez, MD	1996
Issels Treatment Center	Gar Hildenbrand, Carlos Ramos, MD	1996
Mission Medical Clinic	James Gunier, HMD, PhD, A. Urena, MD	1984
Nature's Medical Center (in Centro Medico Madero)	Eugen Robert Borchert, MD	1991
New Century Clinic§	Hulda Clark	1990s
Oasis of Hope Hospital	Francisco Contreras, MD	1970
Providence Pacifica Hospital	Gary Tarasov, MD	?
Rapha Clinic (aka Hope4Cancer)	Antonio "Tony" Jimenez, MD	1998
San Diego Clinic	Filiberto Muñoz, MD	1998
Sanoviv Hospital	Antonio Peña, MD, M. Wentz PhD	1998
Scientific Regeneration Institute	Neil C. Norton, MD	1968
Stella Maris Clinic	Gilberto Alvarez, MD	1990

*In addition, I know of 4 clinics in other border towns treating cancer with complementary and alternative medicine (CAM) methods. These are the Center for Immuno-Energy Therapy (D. L. Hull, MD) in Reynosa; Good Samaritan Medical Center (Ricardo James, MD) in Juarez; Advanced Medical Group (Francisco Soto, MD) in Juarez; and Rio Valley Medical Center (Frank Morales, MD, and R. Diaz MD) in Matamoras. None have a Web site, and little is known about them but their names.
†Also doing business as St. Joseph's hospital.
‡Current status uncertain.
§Current status uncertain. Dr Andrade is listed at hope4cancer.com as a current employee of the Rapha Clinic.

radiation, and chemotherapy). In California, this change was codified in 1960 by the passage of the Health and Safety Code §1701.1, the so-called "Krebiozen Law" (named for a contemporary cancer treatment controversy). It stated,

> The sale, offering for sale, holding for sale, delivering, giving away, prescribing, or administering of any drug, medicine, compound or device to be used in the diagnosis, treatment, alleviation or cure of cancer is unlawful and prohibited, unless either approved by the FDA [Food and Drug Administration] or passing stringent requirements of the medical board.

Passage of such stringent "antiquackery" statutes made it far more difficult than it had previously been for US patients to exercise autonomy by using nonconventional treatments for cancer. This loss of treatment options became a national phenomenon with passage of the Kefauver-Harris Amendments to the US Food, Drug and Cosmetic Act in 1962.[2]

After half a century of skirmishes, Kefauver-Harris finally put the full power of a US government agency behind efforts to stamp out unapproved therapies by strengthening the regulatory powers of the Food and Drug Administration (FDA). To quote the FDA Web site, "These Amendments required drug manufacturers to prove to the FDA that their products were both safe and effective prior to marketing." The amendments also mandated lengthy and costly randomized controlled trials before a treatment could be approved by the FDA. The FDA now had to be provided with "full details of the clinical investigations, including drug distribution, and the clinical studies had to be based on previous animal investigations to assure safety."[3]

The interstate shipment of alternative medicaments was outlawed at the federal level. Those who continued to market such approaches were now not just breaking some state laws but were also coming into direct conflict with a newly invigorated arm of the federal government, while cancer patients and others who persisted in pursuing nonconventional treatments were stigmatized as "medical deviants."[4]

There had been pitched battles between the medical authorities and the supporters of unconventional cancer treatments for decades before the passage of the Kefauver-Harris amendments, but in the harsh new legal climate, nothing short of a physical exodus could guarantee the continued availability of alternative treatments. In the following year, the first 2 Mexican clinics, as well as a national organization to promote their use, were founded.

Brief History of Tijuana Clinics

The Mexican border clinic phenomenon came about in large part because of the inspiration of 3 remarkable US women: Mildred Nelson, Cecile Hoffman, and Charlotte Gerson. Mildred Nelson, RN, was an assistant to the lay herbalist, Harry Hoxsey. Mrs Cecile Pollack Hoffman was a San Diego schoolteacher and breast cancer patient who developed a passionate belief in an unapproved medicine called Laetrile and in the right of cancer patients to receive it. Charlotte Gerson was the daughter of a German-born doctor and nutritionist, Max Gerson, MD. Each was a forceful personality on a mission to save a treatment in which she deeply believed. Working individually, these 3 nonphysicians initiated a movement that changed the course of North American medicine.

The treatment philosophies these 3 women promoted shared a background of intense struggle, government prosecution, and wide-scale opprobrium from the US medical establishment. Via different routes, each sought a safe haven across the Mexican border. There they would be close enough to the United States to attract clients but would still be beyond the reach of US authorities. This strategy essentially worked for several decades. The clinics founded by these 3 women, as well as the dozens more that were inspired by them and who modeled themselves on their example, continue to this day to attract patients to Tijuana and other Mexican border areas.

Hoxsey Therapy

The border clinic phenomenon started in 1963 when Mildred Nelson, RN, set up the Bio-Medical Center (Centro Biomedico) to rescue the unconventional treatment that was the legacy of her mentor, Harry Hoxsey (1901-1974). Hoxsey, a layman, had operated a string of cancer clinics that dispensed external and internal herbal treatments across the United States. In 1960, these clinics were finally closed down by the efforts of the American Medical Association (AMA), the FDA, and other governmental agencies. With Hoxsey's approval, Nelson started her Tijuana clinic and began offering patients treatment with Hoxsey's original formulations.

"Despite the challenges that faced a North American woman establishing a business in a conservative, male-dominated, Third World nation in the early 1960s," wrote journalist Peter Barry Chowka, "Mexico, in Nelson's view, was a comparative haven for medical freedom of choice because of the more laissez-faire political climate of the country."[5]

Nelson established the Bio-Medical Center in a hilltop villa overlooking the city, where it still functions. At Hoxsey's urging, she omitted his name from the clinic to avoid controversy. She also eschewed advertising or publicity and let the clinic's reputation spread by word of mouth. Bio-Medical Center clinic directors have always been reluctant to speak at alternative health events, where other clinics are only too pleased to publicize their approaches. Nor does the clinic have a Web site or even a US phone number. Yet the Bio-Medical Center has survived for more than 40 years by letting potential clients find their way to its hilltop redoubt. Nelson was owner and director until her death in 1999. Since then, the clinic has been run by her sister, Liz Jonas.

Hoxsey spokespersons claim a 50% to 70% "success rate" in the treatment of cancer. The parameters of this success are not defined, although 2 small retrospective studies suggested the possibility of benefit for some patients.[6,7] Further studies have not been done either by the clinic or by disinterested outside scientists.

Laetrile

Around the same time that the Hoxsey clinic was getting started, an even greater challenge to orthodox medicine emerged in America: Laetrile, the proposed anticancer "vitamin B-17." Laetrile (a trade name for amygdalin) is a natural substance found in 1200 plants but commercially extracted from the kernels of fruits of the family Roseaceae, such as peaches and apricots. According to its advocates, Laetrile has both preventive and therapeutic effects on cancer. In the 1960s and 1970s, the growing number of Laetrile proponents created the most serious challenge to medical expertise and authority that has ever come from a nonconventional medical movement. It was the treatment that generated (in the words of historian James Harvey Young, PhD) "the largest amount of public furor in the nation's history."[8]

In March 1963, author Glenn Kittler published 2 articles on Laetrile in the *American Weekly*, a Sunday supplement to the Hearst newspapers. Kittler's book, *Laetrile: Control for Cancer*, was then rushed into print with an initial press run of 500,000 copies.[9] One of those who read Kittler's book was Cecile Hoffman, a San Diego English teacher, who had had a radical mastectomy for breast cancer in 1959. Three years later, the disease had widely recurred.[8] Unable to find a US physician to administer Laetrile intravenously, she located a former Mexican Army pathologist in private practice across the border in Tijuana who would do so. His name was Ernesto Contreras Rodriguez, MD.

Hoffman's strong belief in Laetrile—and her struggle to defend medical freedom of choice—led to the formation of the International Association of Cancer Victims and Friends (IACVF) in 1963. (The name was

later changed to the International Association of Cancer *Victors* and Friends.) The group's 8000 members and its publications, especially the *Cancer News Journal*, generated a great deal of interest in Laetrile and in the new clinics across the border.

An offshoot, the Cancer Control Society, was founded by Betty Lee Morales in 1972. This organization published the *Cancer Control Journal* and sponsored large annual meetings in the Los Angeles area, providing a showcase for the burgeoning alternative movement and offering bus tours of the Tijuana clinics. Together with the older National Health Foundation (founded 1955) and the Committee for Freedom of Choice in Medicine, Inc (founded 1972), these California-based organizations collectively promoted nonconventional cancer treatments and the Mexican clinics. Tijuana thus became firmly associated in the public mind with alternative cancer therapy, particularly with Laetrile.

In 1970, Dr Contreras expanded his Del Mar Medical Center and Hospital (Centro Medico y Hospital del Mar) and added English-speaking staff to accommodate the influx of US patients. This was described rhetorically as "an oasis of hope," an epithet that eventually became the official name of the facility. Today, the Oasis of Hope Hospital in Playas de Tijuana remains one of the largest and busiest CAM clinics in Mexico. It is said that 40,000 US residents have sought treatment at Oasis since its inception. Although Ernesto Contreras, Sr, died in October 2003, the clinic today is run by his son, Francisco Contreras, MD, as well as his grandson, Daniel Kennedy. At the time of my visit in September 2004, the clinic was bustling and extensive renovations were in progress.

In 1971, the American Cancer Society (ACS) placed Contreras, Sr, on its list of practitioners of "unproven methods," claiming that he "promoted Laetrile injections as a cure-all." In 1976, I visited this Tijuana "Laetrile mill," as the US media called it.[10] What I found was not a mill but a peaceful facility, organized around a courtyard with a fountain at its center. Dr Contreras seemed kind, reasonable, and gentle. A lay Christian preacher, he led his patients in prayer and song. Patients spoke of profound pain relief on Laetrile, gratitude to Dr Contreras, and rising anger at their own government.

Other Laetrile Clinics

In the mid-1970s, other clinics were founded to take advantage of the burgeoning interest in Laetrile. The first of these was the Cydel Clinic (Clinica Cydel). This was headed by an oncologist, Mario Soto, MD, a Guatemalan who had previously used Laetrile in a Mexican government hospital in Mexico City. He was instrumental in getting Laetrile approved for use in his country.[11] The clinic was owned and operated by the Del Rio brothers but inspired by a Canadian financier, Andrew McNaughton.

In 1982, Dr Harold W. Manner's Metabolic Research Foundation took over the Cydel Clinic (and its affiliated Del Rio Hospital), and in 1984, the name was changed to the Manner Clinic.[12] Harold W. Manner, PhD, was a University of Loyola, Chicago, biologist who had reported positive results in animals using a combination of Laetrile, enzymes, dimethyl sulfoxide (DMSO), and vitamins A and C: the so-called "Manner cocktail." He created an international stir with the claims in his 1979 book, *The Death of Cancer*.[13] Manner died of a sudden heart attack in November 1988. His one-time medical director, Gilberto Alvarez, MD, who now operates the Stella Maris clinic in Tijuana's commercial district, has perpetuated his legacy.

A third Laetrile clinic was founded in 1977 by Robert Bradford who had earlier (1972) established the Committee for Freedom of Choice in Medicine. This facility was called the American Biologics hospital. Bradford partnered with medical director Rodrigo Rodriguez, MD, who had earlier been head of nuclear medicine at Cydel. They were soon joined by journalist and publicist Michael Culbert, author of a popular book, *Vitamin B17: Forbidden Weapon Against Cancer*, who had been employed by Bradford since 1974.

In 1999, Rodriguez and Bradford decided to go their separate ways. Dr Rodriguez retained ownership and control of the 41-bed hospital and, with Culbert's help, renamed it International Bio Care (IBC) Hospital. Bradford kept possession of the American Biologics name and established his own American Biologics Hospital with Scott Norby (formerly of Meridien Hospital) in the Playas district. This effort to establish a new American Biologics hospital was short lived, and in 2002, Bradford moved his clinic to the 20-bed Ingles Hospital in Tijuana.

In the 1970s and particularly in the early 1980s, the Tijuana clinics were booming. By 1978, about 70,000 US cancer patients had taken Laetrile, and many of those had gone to Mexico to receive it.[14] In the 1978 edition of his book *Laetrile: Nutritional Control for Cancer*, author Glenn Kittler stated—based on interviews with clinic directors—that the Contreras and Cydel clinics together were treating about 250 new patients per week, or 13,000 per year.[11]

With the legalization of Laetrile in more than 20 US states, it seemed as if a revolutionary force was being unleashed that would storm the heights of medicine. But a negative clinical trial performed in 1982 at the Mayo Clinic marked the beginning of a steep decline for the Laetrile movement.[15]

Table 2. Gerson Institute–Affiliated Clinics, 1977-2002

Hospital	*Doctor(s)*	*Opened*	*Closed*	*Reason*
Hospital La Gloria	Tom Siaw, Curtis Hesse	1977	1985	Destroyed by fire
Jardines de la Mesa	Victor Ortuño, A. Ortuño, D. Rogers	1978	1982	Merged with La Gloria
CHIPSA	Victor Ortuño et al	1991	Gerson left in 1996; CHIPSA reopened 2004	Gerson split with CHIPSA and Gerson Research Organization
Meridien Hospital	Alicia Melendez, Lucia Bravo (and S. Norby)	1996	Gerson left in 2000; clinic closed soon after	Disagreements with Norby, who went to prison in 2002
Oasis	F. Contreras	2000	2002	Disagreements

Gerson Treatment

The third formative development was the creation of a series of clinics devoted to the concepts of the late German dietary doctor, Max Gerson, MD (1881-1959). For nearly 75 years—in Germany, New York, and then Mexico—the Gerson family has been an influential presence in the alternative cancer field. In 1974, Max Gerson's youngest daughter, Charlotte, was approached by Norman Fritz, then vice president of the IACVF, with the idea of popularizing the Gerson therapy. In 1977, the US Gerson Institute was founded to perpetuate the work of Max Gerson. The Gerson program soon followed the lead of the Hoxsey and Laetrile clinics and was transplanted to Mexico. In July 1977, Charlotte Gerson, again with the help of Fritz, founded the Hospital La Gloria, midway between Tijuana and Rosarito Beach.*

The history of the Gerson therapy has not been fully chronicled. There was a sympathetic history of Gerson's encounters with the AMA prepared for the Office of Technology Assessment by the late historian Patricia Spain Ward.[16] But Ward's survey did not include information on the Tijuana clinics. There was valuable information on founders of the program (including Norman Fritz) in Professor David Hess's *Evaluating Alternative Cancer Treatments*.[17] A biography of Max Gerson, by his grandson Howard Straus (Charlotte Gerson's son), appeared in 2002 and gave much information about the Gerson clinics in Mexico.[18]

*Norman Fritz is the current president of the Cancer Control Society. A graduate of the University of Kansas, he was an aeronautical engineer who worked for Jet Propulsion Laboratories and was one of the principal architects of Apollo 11. In 1964, he met Cecile Hoffman, and in 1977, he began to work full-time at the Gerson clinic. He was on the original board of the International Association of Cancer Victims and Friends (IACVF) and for many years served as its vice president and then president, writing and editing IACVF's *Cancer News*. Fritz has remained active in this field for 40 years, as an extraordinarily hard-working behind-the-scenes influence. La Gloria was originally a motel and bar, famous in Tijuana legends as the placed where Rita Hayworth honeymooned and where the Margarita cocktail was invented and named for her in the 1930s.

From conversations with Charlotte Gerson, as well as other early participants, I have pieced together a chronology of the Gerson Institute's affiliations in Tijuana. Between 1977 and 2002, the Gerson Institute of San Diego has been associated with 5 different medical facilities in the Tijuana area (Table 2).

There is presently no officially endorsed Gerson clinic in Mexico (Charlotte Gerson, personal communication, November 3, 2004). However, there continue to be champions of this dietary philosophy there, as elsewhere. CHIPSA hospital, after closing for extensive renovations, reopened in 2004. Victor Ortuño, MD, uses a Gerson-influenced approach but also incorporates hyperbaric oxygen and other experimental treatments. Under the guidance of Gar Hildenbrand, founding director of the independent Gerson Research Organization of San Diego, a "modified/modernized version of the Gerson diet" is also an integral element of the Issels Program at Oasis (Gar Hildenbrand, personal communication, November 15, 2004). Anthony "Tony" Jimenez, MD, also uses the diet at his Rapha (Hope4Cancer) clinic.

The 82-year-old Gerson does not seem to have lost any of her enthusiasm for the validity of her father's therapeutic approach. Recently, she was buoyed by the positive comments of Charles, the Prince of Wales, concerning the Gerson regimen. The Prince told a British medical conference about a patient of his acquaintance who achieved a long-term remission on the Gerson diet. "It is therefore vital that, rather than dismissing such experiences, we should further investigate the beneficial nature of these treatments," he said.[19]

Impact of the North American Free Trade Agreement

The North American Free Trade Agreement (NAFTA), which went into effect on January 1, 1994, phased out tariffs between the United States, Mexico, and Canada over a period of 15 years, thereby creating the world's largest integrated trading bloc. The goal of NAFTA was to increase exports, produce more jobs,

and improve North America's competitiveness in relation to Japan and Europe.

No geographical area was more transformed by NAFTA than Tijuana. The sleepy burg of 350,000 that I visited in the 1970s has now become a "powerhouse trans-national economic zone"[20] with a population approaching 1.5 million.

How has this affected the Tijuana clinics? In a word, adversely. Little by little, the growing cooperation among the governments of the 3 NAFTA participants has led to an increasingly critical scrutiny of the clinics' practices.

Peter Chowka, long a perceptive commentator on the Mexican clinic phenomenon, has detected a profound trend:

> There has been the gradual move towards "harmonization" of businesses including bringing standards of medical care in both countries into greater alignment. Inevitably, this means more regulation and scrutiny of alternative medical enterprises by Mexican authorities. Recent Internet "surf days" for example—efforts by the US Federal Trade Commission (FTC) to monitor and shut down allegedly fraudulent Web sites including ones promoting border alt med clinics—have been conducted in cooperation with Mexican authorities.[20]

Before NAFTA, the financial contribution of the clinics to the Tijuana economy was considerable. One clinic alone, the Oasis of Hope, claims to have treated 40,000 US residents over the past 4 decades. The facility's current fee is $24,000 for 4 weeks of treatment. At present exchange rates, that would represent a contribution of millions of dollars per year to the local economy. Even allowing for some exaggeration, it is clear that for years, the clinics have been an important source of income and tax revenue for the local and national economy.

But NAFTA has hugely increased the importance of the foreign-owned *maquiladoras* (assembly plants) and concomitantly reduced the clinics' importance to the Tijuana economy. A few clinics (such as Oasis) remain busy. But many have fallen on hard times, and most of them are lucky to be half full. No one anticipates a return to the boom period of the 1980s. The political clout of the clinics (and presumably their ability to fend off attacks) has decreased accordingly.

For a time, after the passage of NAFTA, Mexicans were too preoccupied with the catastrophic devaluation of the peso and the crash of the Mexican stock exchange in December 1994 to devote much effort to controlling the clinics. But by the late 1990s, there were rumblings of a crackdown. The FTC began sending out warnings to 800 Web sites that were allegedly promoting cures for cancer. Some of these Web sites had links to the Mexican clinics. The election of George W. Bush and his Mexican counterpart, Vicente Fox, in 2000 signaled the beginning of a concerted multinational attack on the border clinics.

Sweeping Raids (2001)

Six months after Fox's election, health authorities in Baja California suddenly cracked down on about a dozen cancer clinics in the Tijuana area. It was the largest legal action against the clinics since their inception. The raids followed exposés in the *San Diego Union-Tribune* of alleged abuses at these facilities, especially the BioPulse clinic.

BioPulse had a high profile, with full-page advertisements on the back cover of *Alternative Medicine* magazine. It was also listed on the over-the-counter stock market, where it described itself to investors as a "hybrid technology firm" that was testing "experimental treatments" in its Tijuana "research center." Intense publicity in Internet chat rooms drove the price of its stock above $13. When the clinic was shut down, its stock plummeted, and it never recovered.[21] Some of the other clinic directors privately expressed relief at this since they regarded BioPulse's "Enron-style" operations as a threat to their own continued operation.

A number of other clinics also folded around this time, although the exact reasons for some are obscure. Some closed temporarily and then reopened but never regained their former vigor. In fact, fully half of all the Mexican clinics have closed, most of these since the 2001 raids (Table 3).

The shakeout that began in 2001 seems to have been the result of 3 major developments:

1. The post-NAFTA regulatory environment. Mexican clinics had operated under century-old legislation that, according to Michael Culbert (personal communication, September 10, 2004), "allows you to do anything as long as an allopathic doctor takes responsibility." In the wake of Fox's election, however, there was a shakeup in the regulatory authority in Baja California and a transfer of the inspectors responsible for supervision of these clinics.
2. A general decrease in travel (including "health tourism") by US residents following the terrorist attacks of 9/11. This general trend in the economy was not reversed until the summer of 2004.[22]
3. A tendency on the part of US health consumers to view their conventional medical system as increasingly friendly toward CAM and the growing availability of certain complementary treatments within that system.

At the time of the 2001 raids, some US commentators speculated that this might be the beginning of the

Table 3. Tijuana Area Clinics Closed Since 2000

Clinic	*Principal*	*Year Closed*	*Reason*
BioPulse International	Loran Swensen, Omar Sanchez, MD	2001	Raid by Mexican Health Department
Bioresonance (CWAT)	David L. Walker	2002	Mexico-United States-Canada Health Fraud Work Group action
Cell Specific Cancer Therapy	John Armstrong	2002	Federal Trade Commission action
Center for General Medicine and Acupuncture	Julian Mejia	?	?
Centro Profesional Unidad de Neurodiagnostico	Salvador Rubio Velez, MD	?	?
Europa Institute for Integrated Medicine	Sonia Rodriguez, MD Jeffrey Freeman, MD	2002	Illness
GenesisWest Institute	Jacob Swilling	2000	"Relocated"
Grupo Medical	Ben Papermaster, PhD	2001	Death of Dr Papermaster
Hospital Meridien	Scott Norby	2002	Norby went to prison
Induced Remission Therapy	Sam Chachoua, MD	2001?	?
International Center for Medical and Biological Research	Adamo S. Lopez, MD	?	?
Kuhnau Center	Wolfram Kuhnau, MD	2003	Death of Dr Kuhnau
New Century Clinic, Century Nutrition	Hulda Clark, MD	2001	Raid. Reopened. Current status unclear
New Hope Bioresonance	David L. Walker	2001	Federal Trade Commission action
21st Century Medicine	Jose Mota	2001?	?

end of the Tijuana clinics.[20] Efforts were announced to eliminate what the *San Diego Union-Tribune* characterized as "deep-seated corruption" among inspectors who had arrived at a modus vivendi with the clinics. More than 100 inspectors were transferred to other areas, and a fresh group of inspectors was brought in to focus on more stringent regulation of the clinics. However, by 2002, the *Union-Tribune* reported (in obvious frustration) that the cleanup of Tijuana's clinics had run out of steam.[23]

One often hears charges that Mexican officials are particularly corrupt and that clinics stay in business only by paying a *mordida*, or bribe, to keep operating. Such charges are difficult to verify, as people rarely voluntarily admit to illegal activities. In addition, these charges play on ethnic stereotypes that are readily believed by Americans whose idea of Tijuana law enforcement was shaped by Orson Welles' *A Touch of Evil*. Yet in truth, corruption is not particularly rife in Mexico. It may surprise readers to know that Mexico ranks as only the 67th most corrupt country surveyed (out of 130), less so than China, Russia, or India.[24]

What kept the clinics open through the difficult year of 2001 was an increasing reliance on treating the local Mexican population. This shift was made reluctantly since local people could obviously not pay anything close to what affluent US residents could. (Mexico's per capita GNP is one fourth that of the United States.) In addition, the clinics drew on their base of support among various North American religious sects, such as the Amish, who as a group seem to have been relatively less daunted by the frightening events of 9/11.

But many of these "plain people" do not come to the Tijuana clinics for unconventional cancer treatments. While they feel comfortable with the natural medicine philosophy of the clinics, they use them mainly for everyday procedures that can be obtained less expensively than back home. Indeed, one former clinic director, Ernesto Contreras, Jr, MD, quit the cancer field entirely and became a referral agent for "plain people" seeking economical conventional treatments in Mexico.[22]

MUCH at Stake

The Mexican clinics were mainly set up to evade what some felt were the overly zealous regulatory powers of the United States. Conversely, for many years, antiquackery forces in the United States were frustrated at their inability to reach across the border and close down clinics that flouted FDA regulations. A US health official called them "fraudulent operators" who "evade law enforcement by operating in one country and targeting consumers of another."[26] In practice, this was a 1-way street: the "fraudulent operators" were all in Mexico, the "targeted consumers" in the United States and Canada. There was special resentment of clinics headed by expatriate Americans, who had seemingly found a way around US jurisdiction. After NAFTA, however, it finally became possible to coordinate the antiquackery efforts in the United States, Mexico, and Canada.

Table 4. Recent Attacks on Border Clinics

Year	*Director*	*Nationality*	*Clinic*	*Lead Agencies*	*Charge*	*Outcome*
2001	Scott Norby	United States	Meridien Hospital, American Biologics	FBI	Mail and insurance fraud	57-month prison term; hospital closed
2002	David L. Walker	United States	Bioresonance Clinic	Federal Trade Commission, State of Washington attorney general	Internet fraud	Clinic closed; $229,000 fine; out of cancer business
2003	John Armstrong	United States	Cell Specific Cancer Therapy	Mexico-United States-Canada Health Fraud Work Group	Internet fraud	Clinic closed
2004	W. Fry, G. Rubio	United States, Mexican	American Metabolics Institute	US attorney, FBI	Conspiracy, health fraud, income tax fraud	Facing 28 years in prison and US $1.1 million in fines

There had been a harbinger of this crackdown in Tijuana. Ten years earlier, on March 18, 1991, 4 men with guns burst into the hilltop St. Jude clinic of Jimmy Keller, who dispensed an amino acid–based treatment called Tumorex. The men (who turned out to be from Mexican immigration) pulled Keller out the door to a waiting van. They then handed him over to 6 other men, in work clothes, who refused to identify themselves but forcibly walked him across the border to San Ysidro, California. These 6 were later identified as bounty hunters employed by the US Justice Department.

There, according to the *Los Angeles Times*, Keller was arrested by the FBI and arraigned on 12 counts of conspiracy to commit wire fraud. This meant that he or someone working for him had made "telephone calls across interstate lines to attract people to his Mexican clinic." Keller was flown to Brownsville, Texas, where he had previously had a clinic, and where bail was set at $5 million cash.[27] Keller was eventually convicted and sentenced to 2 years in prison.

This cross-border raid shocked many in the freedom-of-choice movement, who contended that the government's actions involved criminal violations both of international agreements and of Keller's civil rights.

In the post-NAFTA era, US-inspired attacks on Mexican clinics have become annual events. That is because, since 1994, there has been an intergovernmental coalition that meets regularly to target Mexican clinics that attract and treat patients from *El Norte*. This little-known coalition is called the Mexico-US-Canada Health Fraud Work Group (MUCH), which was established "to strengthen the three countries' ability to prevent cross-border health fraud."[28]

The participating agencies in MUCH include the FDA (the lead US agency) and the FTC, Mexico's Secretaria de Salud (Ministry of Health), and PROFECO (Federal Agency for Consumer Protection), Canada's Competition Bureau and Health Canada, as well as the offices of various attorneys general and state health departments. It also involves unspecified nonprofit health organizations.

"Phony treatments targeting US consumers with serious illness are a significant concern for the FTC and its partners," said Howard Beales, director of the FTC's Bureau of Consumer Protection.[29]

In 1998, MUCH members ratcheted up their ability to attack the clinics. They announced the formulation of a mutual agreement on strategies to combat health fraud. This so-called Joint Strategies Agreement "provides a formal framework for cooperation and signals an expansion of joint efforts against the fraudulent marketing and sale of health related products, services and devices."[30]

"Our Mexico-USA-Canada Health Fraud Task Force has been very successful in attacking health fraud common to our three countries," said Gary Dykstra, FDA deputy associate commissioner for regulatory affairs. "This new Joint Strategies Agreement will take our cooperative efforts to the next level."[29]

In practical terms, this meant clinics operating in Mexico and targeting patients in the United States and Canada. And, in fact, 1 of the 3 projects announced at that time called for "a Mexican government crackdown on border clinics in that country offering 'cures' for cancer."[29]

Each year since 2001, a clinic and its doctors or directors have been singled out and their operations shut down (Table 4).

These recent operations are all similar in nature. They originated with either the FDA or the FTC and involved various high-level state and federal attorneys general and the FBI, with coordinated raids on clinics by Mexican authorities or FTC attacks on Web sites. Each time, the charges proffered have been based on alleged financial irregularities, which have only peripheral relevance to the medical practices of targeted individuals or clinics. Whatever the directors' degree of financial culpability—and it is too convoluted an issue to deal with here—there can be little

doubt that the effect of these actions has been to weaken the viability of the Tijuana clinics as a whole.

It is noteworthy that, with the exception of Dr Rubio, all of the figures who have been singled out in recent raids were US citizens, not Mexicans. In addition to those listed in Table 4, these include US citizen Loren Swensen (BioPulse), Canadian Hulda Clark (New Century), Australian Sam Chachoua, MD (Induced Remission Therapy), and South African Jacob Swilling (GenesisWest). This follows a similar pattern in past raids. The targets tend to be the "interlopers" who are perceived by authorities on both sides of the border as trying to evade US justice. Perhaps the Mexican government also saw such individuals, as foreigners, as politically more acceptable targets.

In the 1970s, there would probably have been a vigorous response to some of these attacks by 5 medical freedom-of-choice organizations, which together had tens of thousands of activist members. Today, these organizations are either defunct or are politically inactive.[†] There is currently no organized force coherent enough to stand up to these coordinated multigovernmental attacks.

Ironically, the acceptance of "integrative oncology" in the United States seems to have come at the expense of a concomitant attack on the more radical "alternative medicine," which, unlike complementary modalities, directly challenges the primacy of cytotoxic cancer treatment. One has the impression that the remaining clinics continue to exist at the whim and forbearance of the 3 NAFTA partners. Little by little, the clinics are being marginalized.

A Matter of Reputation

Mexican border clinics have an almost universally poor reputation among mainstream US doctors. Negative characterizations are also commonly found in statements by US public health officials and in periodic exposés in the US mass media. These attacks are then repeated at Web sites dedicated to debunking alternative medicine. Perhaps the most comprehensive and often-quoted attack on the clinics is a lengthy unsigned 1991 article in an ACS journal, one in an ACS series decrying "unproven methods."[30] "The American Cancer Society . . . strongly urges individuals with cancer not to seek treatment with metabolic therapies in the Mexican border clinics around Tijuana and elsewhere," it reads.[30] To spokespersons for the orthodox medical point of view, the border clinics are simply mercenary operations created by (mostly) US hucksters, using untested, unnecessary, and/or dangerous treatments, which they offer to desperate and gullible patients at an exorbitant price.

Such clinics, we are told, promote schemes that bilk not only patients but also investors and insurance companies. "In the lucrative world of Tijuana's alternative clinics, insurance fraud often flourishes alongside unproven therapies," wrote two *San Diego Union-Tribune* reporters.[31]

Barrie Cassileth, PhD, an individual long associated with the ACS, has summarized the negative view of the Tijuana phenomenon. "These clinics hurt a great many patients," she is quoted as having said. "Mostly, they hurt people by keeping them from care they need and can benefit from."[32]

The main charges leveled against the Tijuana clinics can be summarized as follows:

1. Hidden ownership: The clinics are primarily owned by US or foreign entrepreneurs who use Mexican doctors as their front men.
2. False diagnoses: Many patients who patronize the clinics are treated for nonexistent "cancers" or a dubious condition called "precancer." Cancer patients are frequently told that they have been cured or are improving, even though they still have active disease.
3. Loss of crucial time: Patients allegedly delay conventional treatment to take ineffective alternatives.
4. Fraudulent therapies: The treatments used in the clinics are either not based on sound scientific principles or else are disproven.
5. Lack of qualifications: The doctors at these clinics are allegedly unqualified to treat cancer patients.
6. Unsanitary conditions: The clinics themselves are unsanitary and ill equipped.
7. Excessive charges: The clinics are in the business of extracting money from desperate patients, as well as from insurance companies and investors.

Charge 1: Hidden Ownership

One often hears charges that the border clinics are only nominally Mexican but are actually owned and directed by US operators, using ill-paid Mexicans as "front men."

"Many of the clinics name licensed Mexican physicians as their medical directors," the *San Diego Union-Tribune* complained. "They have licenses to operate as traditional medical clinics, but they offer alternative therapies instead."[1]

"About a dozen United States promoters have joined with Mexican colleagues to offer a variety of treatments," reads the aforementioned ACS statement.

[†]The National Health Federation still exists but has ceased to hold meetings or conventions. The IACVF exists but is active in only a few local chapters. The Cancer Control Society holds well-attended annual meetings but does not focus on the plight of the Tijuana clinics. The International Council for Health Freedom suspended operations after the 2004 death of its founder, Michael Culbert.

Table 5. Border Clinics With Significant Involvement by US Citizens

Clinic	*American Involvement*
American Metabolic Institute	William R. Fry
Bio-Medical Center	Liz Jonas, Donna McCright
Hospital Santa Monica	Kurt W. Donsbach, DC
Ingles Hospital	Robert Bradford, DSc, ND
Issels Treatment Center	Ilse M. Issels, Gar Hildenbrand
Mission Medical Clinic	James Gunier, HMD, PhD
Providence Pacifica Hospital	Gary Tarasov, MD
Rapha (Hope4Cancer)	Antonio "Tony" Jimenez, MD
Sanoviv	Simon Wentz, PhD

From Fink[72] and interviews with clinic directors.

The hidden ownership charge appears to be both outdated and exaggerated. While it is undeniable that US citizens were involved in founding the original clinics, Mexicans have exercised increasing autonomy in running the clinics and starting new ones. Since the late 1970s, in fact, Mexican law has required that clinics must have at least 51% ownership by Mexicans and must also employ a Mexican as medical director (Michael Culbert, personal communication, September 10, 2004). Of the present-day clinics, only about one third appear to have significant US ownership or involvement (Table 5).

Charge 2: False Diagnoses

The ACS and others claim that many patients are treated for nonexistent cancers. However, they have presented no specific evidence to support this charge. It would be absurd to argue that this never occurs. Some practitioners have indeed adopted nonconventional definitions of cancer and "precancer." For instance, in her book *The Cure for All Cancers*, Hulda Clark, PhD, claims to have cured cases that were clearly not biopsy-confirmed cancer.[33] But the extent to which similar practices go on in other clinics is unknown. In the absence of specific evidence, it is unfair to tar them all with this same brush.

Certainly my impression from clinic interviews is that the great majority of patients arrive at the clinics having not only been given a valid cancer diagnosis at home but also after having received extensive conventional treatment. They are generally the people who have been told "there is nothing further we can do for you."[27] There is also a substantial number of patients who find the prospect of further conventional cytotoxic treatment for advanced disease either daunting or futile.

Charge 3: Loss of Crucial Time

The ACS stated, "There have been many instances where patients utilizing metabolic therapies were kept from timely, effective therapy, resulting in needless deaths."[30] There are no references or citations given for this charge, although it is logical to believe that this unfortunately does sometimes happen. The clinic directors have a strong financial incentive to convince patients to come to their clinics rather than the patient going to more established facilities. But the crucial question remains, How often does this happen? In the absence of specific, verifiable data, it is hard to know how serious this problem is.

This argument is often repeated in discussions of alternative medicine. For instance, at the 2004 American Society of Clinical Oncology (ASCO) meeting, C. McNeil et al presented a poster warning against the "delay in conventional breast cancer treatment associated with alternative therapy usage." The presentation concerned 6 patients treated at 2 Sydney, Australia, hospitals who had delayed conventional treatment to try alternatives. Three died while the other 3 were still alive and possibly cured by conventional means.

Alternative therapies, these doctors concluded, are "causing deleterious delay in commencing empirically validated conventional therapies."[34] However, 6 oncologists were involved in this study over a 4-year period and each saw ~200 new patients per year. The 6 cases cited in the study were in fact drawn from a base of ~4800 patients. Thus, the "deleterious delay" affected approximately 0.125% of the total breast cancer patient population, hardly a major health issue.[35]

Charge 4: Fraudulent Therapies

In its 1991 report, the ACS erroneously subsumed all the border clinic treatments under the single rubric of "metabolic therapy." It then went on to claim that this sort of treatment is "not based on sound scientific principles" or else has been disproved. "No evidence exists that any of these modalities is more effective than no treatment at all," the ACS added. "They are antiquated, disproven, and in some cases clearly hazardous."[30]

This is a classical example of the Procrustean approach so often taken by the medical establishment toward unorthodox methods. No single philosophical concept unites all these therapies or clinics. Metabolic therapy is a concept that was first promulgated by Dr Max Gerson, who wrote that "there is no cancer in normal metabolism." The late biologist, Harold Manner, PhD, popularized the term to describe a comprehensive nontoxic approach to the treatment of cancer. Today, this term has broadened to cover several, although by no means all, of the treatment programs employed at the border clinics. From the start, however, there has been great variety—and often overt competitiveness—in the treatments and medical philosophies pursued at the various clinics.

Table 6. Treatments Commonly Used in the Tijuana Clinics

Clinic	*Lower-Dose Chemo-therapy*	*Chelation*	*Dendritic Cells*	*Dietary Therapy*	*Hyperbaric Oxygen*	*Homeo-pathic Treatment*	*Hoxsey Herbal Formulas*	*Hyper-thermia*	*Immune Therapy, Vaccines*	*Laetrile*	*Live Cell Therapy*	*Ozone/ Oxygen*	*Poly-MVA*	*Virus Treatment*
AMI	X	X	X			X			X	X		X		
Baja Nutri Care				X						X				
Bio-Medical		X				X	X							
CHIPSA				X	X									
Insulin Potentiation Therapy Clinic	X													
International Bio Care		X	X					X		X	X			
Issels			X	X				X	X	X				
Oasis	X								X	X				
Rapha	X	X		X		X			X	X			X	X
San Diego	X	X						X	X					X
Sanoviv	X							X	X					
Santa Monica								X	X	X		X		
Stella Maris	X	X						X	X	X		X		X

Table 7. Depth of Research on Border Clinic Treatments*

Treatment	*PubMed Cites*	*Clinical Trials*	*Randomized Controlled Trials*	*American Society of Clinical Oncology 1994-2004*	*Clinical Trials in Progress*
Alivizatos treatment	0	0	0	0	0
Amygdalin (Laetrile)	229	14	0	0	0
Ascorbic acid (+ cancer treatment)	1147	116	61	7	5
Bio-oxidative therapy	1	0	0	0	0
Coffee enemas	12	1	0	0	0
Coley's toxins	21	0	0	0	0
Dendritic cell vaccine	909	150	78	56	23
Dimethyl sulfoxide	921	21	9	2	0
EDTA chelation	32	1	0	1	1
Gerson diet therapy	~24	0	0	0	0
Homeopathy	97	6	4	6	1
Hoxsey herbs	2	0	0	0	0
Hyperbaric oxygen	920	86	39	4	3
Hyperthermia (+ cancer treatment)	8579	1145	404	49	26
Insulin potentiation therapy	3	0	0	1	0
Intravenous chlorine oxides	4	2	0	0	0
Issels autologous vaccine	0	0	0	0	0
Live cell therapy	6	0	0	—	0
Methylglyoxal	281	10	2	3	0
Mistletoe	309	28	15	1	4
Ney tumorin	2	0	0	0	0
Oncolytic Newcastle disease virus	428	19	3	6	0
Pancreatic enzymes	5049	94	22	13	1
Poly-MVA	1	0	0	0	0
Selenium (+ cancer treatment)	1103	80	53	12	6
Ultraviolet blood treatment	1	0	0	0	3

*The listing of treatments comes from Fink,[72] supplemented by the author's interviews and observations. All search terms in PubMed were modified by the additional terms *cancer* or *cancer treatment*. These numbers are only a rough guide. No attempt has been made to judge the relevance of these listed articles to the particular treatments that are given in Mexican border clinics. In fact, some of these cited articles actually question the validity of the treatments they discuss. Clinical trials come from the cancer-delimited trials at www.clinicaltrials.gov. The numbers in this table represent citations in PubMed as well as abstracts indexed by the American Society of Clinical Oncology for the period between 1994 and 2004.

A full examination of the safety and effectiveness of the treatments used in the Tijuana clinics is beyond the scope of this article. However, some of the treatments that are being used are presented in Table 6.

It is also possible to assess the depth of research that exists in the realm of conventional medical research for many of the treatments that are administered at the Tijuana clinics (Table 7).

There is thus a huge disparity in the documentation of methods used at the various clinics. Some of the better-documented techniques include the use of hyperthermia, pancreatic enzymes, ascorbic acid, selenium, mistletoe, dendritic cell vaccines, and oncolytic viruses. Citations at www.clinicaltrials.gov and www.cancer.gov show that some of these methods are presently being investigated as experimental treatments even in standard US cancer hospitals.

On the other hand, some of the treatments are almost entirely lacking in scientific documentation. These include the Alivizatos treatment (IBC), bio-oxidative therapy (Santa Monica), poly-MVA (Rapha), and intravenous chloride oxides (IBC).

Inasmuch as some treatments (eg, homeopathy, Coley's toxins, Issels autologous vaccine, methylglyoxal, and ultraviolet blood purification) came into being decades ago and are no longer widely used, the ACS is in a sense correct in describing some common alternative treatments as "outdated." However, "old" is not necessarily synonymous with "ineffective." Some of these treatments have considerable scientific documentation, especially from pre-1966 and/or foreign sources. Moreover, several of these outdated approaches now form the basis of current, scientifically reputable conventional treatments. Ultraviolet blood treatment, for example, long an alternative staple, is now part of the standard conventional treatment for cutaneous T-cell lymphoma (photopheresis and transimmunization[36]). Coley's mixed bacterial vaccine in particular is the subject of renewed interest.[37]

It is sometimes said that Tijuana clinic directors provide treatments that they know are ineffective. Leaving aside the ethical issues, this would be contrary to their financial interests. Every patient who comes to a foreign clinic has to be persuaded to make a costly and difficult voyage. These clinics largely attract patients through word-of-mouth recommendations based on patients' perceptions of therapeutic results. Clinic doctors thus have a strong incentive to use

Table 8. "Signature" Treatments of Tijuana Clinics

Clinic	*Signature Treatment*	*Claim to Preeminence*
AMI	Proprietary immune vaccines	Long experience
Bio–Medical Center	Hoxsey internal/external formulae	Sister of Hoxsey's nurse
International Bio Care	Laetrile, live cell, Alivizatos	One of the first Laetrile clinics
Insulin Potentiation Therapy Clinic	Insulin potentiation therapy	Son and grandson of founders
Ingles Hospital	Bradford diagnostic techniques	Early Laetrile pioneer; Lyme disease treatments
Issels Treatment Center	PUVA photopheresis with overnight culture of monocytes to create live dendritic cells	Widow of the founder
Oasis of Hope	Laetrile, metabolic therapy	Son of a pioneer
Rapha/Hope4Cancer	Asian (Thai) treatments; poly-MVA	—
San Diego	Newcastle Disease virus, etc	Inexpensive, walk to clinic
Santa Monica	Bio-oxidative therapies	40+ years experience
Stella Maris	Manner treatment	Manner's medical director for 10 years

treatments that they and their patients believe to be the most (not the least) effective.

Each clinic also tries to have at least 1 "signature" treatment that sets it apart from the others. These tend to be the least documented treatments. At the present time, some treatments are closely associated with a particular clinic (Table 8).

Charge 5: Lack of Qualifications

Many critics alleged that clinic doctors lack the qualifications to treat cancer. The ACS article derides them as "self-proclaimed cancer specialists," none of whom are "specifically trained in oncology." It is true that few, if any, of the clinic doctors are board-certified oncologists. We must, however, bear in mind that Mexico is still a developing country, only the 78th wealthiest in the world.[24] The health care situation in Mexico is poor. Annual health care funding is $228 per capita, or 25th out of 25 surveyed countries.[24]

Despite the lack of advanced specialty training, all of the medical directors of the Tijuana clinics known to me are graduates of bona fide medical schools, primarily the Autonomous Universities of Mexico City, Guadalajara, and Baja California. A minority of them also trained in the United States or Europe. For instance, Francisco Contreras, MD, medical director of Oasis of Hope, stated that after graduating from a Mexican medical school, "he continued his education at the University of Vienna, Austria, where he expanded his training for 5 years in oncology surgery and again graduated with honors."[38]

Dr Rodrigo Rodriguez of IBC did his internship at the Doctors' Hospital, Toronto, Canada, and his residency at Maimonides Medical Center, Brooklyn, New York. He was head of nuclear medicine at the Cydel Clinic in Tijuana and then became medical director of the American Biologics Hospital in Tijuana, where he specialized in "nuclear and nutritional medicine, metabolic therapy and rejuvenation."[39]

Other clinic doctors went directly from medical school into a Tijuana clinic and trained there. In 2001, author Michael Lerner made this assessment of these physician employees: "They were typically earnest young physicians, some of whom seemed to me pained that they had to work at these clinics. Some visibly distanced themselves from the entrepreneurs who run the clinics. Many move from clinic to clinic over the years."[25]

By and large, these Mexican doctors appear to be warm and caring individuals who are knowledgeable about alternative treatments. They are bright and resourceful people and typically know far more about CAM than the average US oncologist does. What they lack in technological know-how they make up for with their concern for the patient as a human being. This may be a big part of their appeal to US citizens, who often feel themselves refugees from an unfeeling medical system that puts a higher priority on expertise than on traditional healing skills.

It is true that these Tijuana doctors are not luminaries in conventional oncology. Few have completed prestigious residencies or published their results in peer-reviewed journals. However, patients who come from afar by and large do so not because they are in search of state-of-the-art oncology but because they are explicitly seeking a fundamentally different approach.

In addition, Mexican cancer care in general cannot be compared to that in the United States. The conventional Mexican Society of Oncology held its very first patient conference in October 2003. In the same year, it compiled the first-ever list of Mexican cancer organizations. There is no nongovernmental Mexican cancer association. By official accounts, communication

between doctors, nurses, patients, and volunteers is poor; there are insufficient public resources and no existing infrastructure outside of Mexico City. The country in fact is troubled by "the economic impact of the high cost of cancer care."[40]

Doctors employed at some Tijuana clinics reportedly earn as little as US $1000 per month,[25] and some have to work 2 such jobs simultaneously (John Fink, personal communication, November 23, 2004). Even clinic owners face the vagaries of a very uncertain market. Therefore, to expect that clinic doctors will be US board-certified oncologists (whose average income in 2001 was $260,000 per year[41]) is simply making an economically impossible demand.

Charge 6: Unsanitary Conditions

It is sometimes said that Tijuana clinics are "strange, backward or even dangerous,"[42] and indeed the city of Tijuana is frighteningly squalid in parts. "Upon crossing the border, one quickly becomes aware that Mexico is not a rich country," says one sympathetic commentator. "Many streets and buildings are in need of repair, and sometimes clinics or hospitals are found in run-down or industrial areas." But, the same author adds, "this is normal for Mexico and is no reflection on the quality of care one can expect once inside where things are clean, modern and well cared for."[43]

Frightening descriptions are repeated at Web sites that vilify alternative medicine. Here is a vivid description of the now-defunct St. Jude clinic of Jimmy Keller by a prominent critic of alternative medicine, Dr J. A. Lowell:

> A long, dark hallway with a plastic runner on the floor leads from the entrance of the building to the "clinic." Visitors are greeted by a small waiting room with broken-down couches full of stains and holes. When the windows are open, chickens can be heard cackling in the back yard. To the left of the waiting room is the treatment room, where Keller injects the secret nostrums that he prepares in a storeroom under the stairs.
>
> On three separate occasions, I have seen the floor and even the street outside littered with used syringes and dirty cotton balls. To the right of the waiting area is a room holding four beds crammed together in which patients can lie down to receive intravenous treatment. Next to it is the bathroom, which has no running water. To flush the toilets, patients must pour water into the toilet tank from bottles in the bath tub.[43]

Here is another lurid description, this one by the late Leandra Smith, describing the New Century Clinic of Hulda Clark, PhD:

> The clinic itself was . . . well . . . sketchy. There was chaos everywhere and people strolling in and out. There was a weird looking guy walking around stalking all the flies with a swatter. . . . Some very sick people were there getting treatments and they were lying on plastic lawn chairs with cushions covered in plastic garbage bags."[44]

I myself never visited either the St. Jude or New Century clinics. However, in visits over the past 28 years to 2 dozen other border clinics, I have never seen conditions that even approximated those described. In general, the facilities I have visited have been neat and clean. The doctors' medical licenses are usually on display. The Mexican staff is well groomed and attentive. The maintenance workers seem, if anything, to overcompensate for Tijuana's squalid reputation. Furnishings tend to be spartan but hardly dilapidated. I have never seen medical waste in or near a clinic, nor have I ever seen or experienced a problem with plumbing. Rooms tend to be small, but the beds in facilities that I visited were not crammed together. I have toured kitchens and eaten in some of these facilities. The food has always been healthful and nutritious. In fact, their kitchens are a point of pride with many clinics, including IBC and Sanoviv.

The physical plant of the clinics I visited can be categorized as follows:

1. regular medical offices that are virtually indistinguishable from their US counterparts (eg, Insulin Potentiation Therapy Clinic);
2. small outpatient facilities in office buildings in Tijuana (eg, San Diego Clinic);
3. small inpatient facilities that are located in converted houses or villas, which generally have less than a dozen beds for inpatients (eg, American Metabolics Institute);
4. medium-sized hospitals that have many of the same facilities of similarly sized US facilities (there are 3 that have about 40 patient beds each, ie, CHIPSA, IBC, and Oasis), and even the ACS's 1991 critique admits that Oasis is "a modern and well appointed hospital" belonging to the American Hospital Association; and
5. one luxurious spa-type facility (Sanoviv) with equipment and amenities at least equal to exclusive private hospitals in the United States or Europe. Sanoviv may be the exception to the rule or perhaps the harbinger of a new type of facility in the border region.

Smith and Lowell may have described the St. Jude and New Century clinics accurately. But any attempt to generalize from these descriptions to the Tijuana clinics as a whole would be a gross distortion of the facts.

Charge 7: Excessive Charges

Detractors often state that the charges at Mexican clinics are excessive, to the point of being downright extortionate. Certainly the days are gone when patients flocked to unconventional practitioners as a poor person's alternative to surgery. Medical inflation has come to the Mexican border clinics, as it has to most areas around the globe (Table 9).

Costs increased markedly between my visits of 2001 and 2004. However, it is difficult to meaningfully compare costs among the clinics because the duration and intensity of treatments differ markedly. Among the outpatient facilities, the least expensive remains the Bio–Medical Center. But it also provides the least amount of care. This clinic requires only that potential patients show up to register without an appointment any day of the work week at 9 AM. Blood samples are taken for analysis, and medical records are reviewed. The cost of this review is between $400 and $1600. Patients are then given a 3-month supply of the Hoxsey herbal tonic for home use, at a cost of $3500. Thus, the initial cost is between $3900 and $5100. But that is not the end; patients are expected to purchase an unspecified number of supplements and to return at 6-month intervals for 3 years.

Considering 4 other outpatient programs (Alivizatos, Ingles, San Diego, and Stella Maris), one can estimate the typical cost of outpatient treatment in Tijuana. This averages $2421 per week, or $7263 for a 3-week course. One must factor in "add-on" costs, such as take-home supplements, applicable taxes, and the associated costs of transportation, room, and board.

Inpatient care is naturally more expensive. Again, considering some typical programs (Baja Nutri Care, CHIPSA, IBC, Oasis), one arrives at an average figure of about $5700 per week or $17,100 for 3 weeks. (Oasis recommends 4 weeks of treatment.) Baja Nutri Care's rate is said to be all-inclusive. However, at most clinics, one must expect add-ons (such as special tests or supplements) that inflate the final bill. Some clinic directors mentioned a 10% Mexican tax on the cost of treatment. Thus, the actual average cost is closer to $7000 per week.

The ACS describes the Mexican clinics as "costly." The degree to which this is true depends on the individual clinic. At some clinics, the charges seem reasonable. Dr Donato Perez Garcia III charges about $500 for a chemotherapy session, which is not exorbitant by US standards. Other doctors, such as Filiberto Muñoz, MD, of the San Diego Clinic, seem determined to keep costs as low as possible. Patients can stay in inexpensive motels in San Ysidro and take a van or even walk across the border to the clinic, which is actually located within the plaza adjoining that busy crossing.

The most expensive programs are the following:

1. AMI's immunotherapy program, which costs as much as $10,500 per week, and may last as long as 5 weeks, for a total cost of $52,500. This unconventional care is provided in an extremely spartan setting in an outlying *barrio* of Tijuana. (The clinic directors are currently under US federal indictment for fraud.)
2. The Issels program, a sophisticated immunotherapy program, costs about $9000 per week, or a total of $36,500 for 4 weeks. The program includes 3 types of vaccine as well as a dietary program. This fee also includes a 6-month supply of dendritic cell vaccine to take home.
3. Sanoviv, at $7000 per week, is in the high-average range for border clinics, but its costly facilities and resort setting overlooking the Pacific are extraordinary. To put its charges into perspective: a comparable (although nonmedical) spa, Canyon Ranch of Tucson, offers a bargain rate of $2870 for 4 nights (based on double occupancy). That comes to more than $700 per day. But Canyon Ranch's fees do not include any medical treatments whatsoever. So, by comparison, Sanoviv does not seem exorbitant, at least for those who can contemplate such tariffs.

It is important to bear in mind that fees at US cancer hospitals are generally as high, or even higher, than those in Tijuana. At one famous US cancer center, foreign patients must pay an advance deposit of $3000 just to receive a second opinion. This covers only the first physician visit, a basic review of pathology slides, and some routine blood work (information provided by Memorial Sloan-Kettering Cancer Center, New York, October 28, 2004). Even at a small hospital in New England, the basic daily fee for acute care is $757 per day, which does not include doctors' fees, medications, and so forth. Most of the Mexican inpatient facilities charge about $1000 per day.

Thus, prices on both sides of the border are actually similar. The crucial difference is that most of those who seek treatment in Tijuana clinics must pay the full cost themselves since most insurers are unwilling to reimburse for treatments given at nonapproved foreign facilities. This, plus the fact that they are fee-for-service private enterprises, creates the impression that they are more economically driven than comparable US facilities.

Tijuana Clinics in the Post-NAFTA Era

US cancer patients today have more choices than were imaginable in 1963, when the first Tijuana clinics were founded. Surgery is not as radical, dangerous, or disfiguring as it was 4 decades ago. Radiation has become better focused on the malignancy. The side effects of chemotherapy can be modulated through

Table 9. Treatments and Costs at Selected Mexican Clinics

Clinic	*Number of Beds*	*Main Treatment*	*Cost per Week*	*Number of Weeks*	*Total Low*	*Total High*	*Comments*
Alivizatos	Outpatient*	Alivizatos	$1491	20 treatments over 23 days	$4900	$4900	Provided at International Bio Care
AMI	8	Eclectic	$9450-$10,500	2-5 wk	$13,500	$52,500	Expensive
Baja Nutri Care	10	Diet	$5500	3	$16,500	$16,500	All inclusive
Biomedical Center	Outpatient*	Hoxsey	NA	1	$3900	$5100	1-d exam + 3 mo of tonic
CHIPSA	41	Diet	$4200-$5500	3-7	$12,600	$38,500	Just reopened
Ingles	Outpatient or 20-bed inpatient	Bradford's treatments	$2500 (out), $4300 (in)	2-6	$5000	$25,800	New facility
Insulin Potentiation Therapy Clinic	Outpatient*	Insulin potentiation	$530-$545	18	$9540	$9810	Only gives chemotherapy
International Bio Care	32	Eclectic	$4600-$8333	3	$13,500	$25,000	Well established
Issels	10	Vaccines (dendritic/ Coley/Issels); Gerson diet	$9,125	4	$36,500	$36,500	Includes 6 mo of dendritic cells
Oasis	45	Metabolic	$6000	4	$24,000	$24,000	Old established clinic
Rapha	5	Poly-MVA	$6000	3	$18,000	$18,000	Small seaside clinic
San Diego	Outpatient*	Eclectic	$1500-$2000	3-4	$4500	$8000	Office building; walk to border
Sanoviv	47	Eclectic	$7000	3	$21,000	$21,000	Seaside resort setting
Stella Maris	Outpatient*	Laetrile	$3800	3	$11,400	$16,200	Also offers hospital at $5400/wk

*At outpatient clinics, one must also calculate the additional cost of room and board.

adjunctive therapies, making this toxic mode of treatment more bearable for many patients.

US culture is also more receptive to the message of alternative medicine than it was decades ago. In 1963, society put its faith in the "magic bullet" of chemotherapy. Today, cytotoxic chemotherapy is recognized to have severe limitations.[45] The future belongs to more targeted therapies, used in combination. There is a greater awareness of the need to focus on life extension, quality of life, diet, and nutrition and to explore options, respect patient autonomy, and integrate mental and spiritual considerations into cancer care. Even the director of the US National Cancer Institute speaks of cancer evolving into a "chronic manageable disease."[46] These changes did not drop from the sky. Indeed, a good case could be made that they were at least in part a direct result of the process started by the freedom-of-choice movement of the 1970s and the Mexican cancer clinics.

Most hospitals treating cancer, including some of the top cancer centers in the United States, now have their own CAM departments and offer a variety of treatments.[47] When author Michael Lerner visited the Tijuana clinics several years ago, he remarked on the impact of these North American CAM programs on the clinics: "Many alternative and complementary medical treatments for cancer were now available in the United States, which lessened the demand for the Tijuana clinics. The supply [ie, number of clinics] had increased even though the demand for services had not grown significantly."[25] Ironically, some of those services had, until recently, been condemned by these same US centers as fraudulent, disproven, or outdated.

In 1963, interest in CAM was intense among a small minority of patients—the so-called "medical deviants."[4] Today, this minority movement has gone mainstream and in one way or another includes the majority of patients. Yoga, meditation, and nutritional counseling are everywhere. An abstract presented at the 2004 ASCO meeting revealed that "91 percent of patients surveyed reported using at least one CT [complementary therapy] since diagnosis."[48] That statistic would have been simply inconceivable when Cecile Hoffman founded the first cancer patients' rights organization.[‡]

A Reason to Exist?

This prompts the question, Do the Tijuana clinics still have a reason to exist?

Many in the medical profession would argue that the clinics have nothing positive to contribute, either to the individual or to society. Even some of those who recognize that the clinics played a constructive role in the past believe that they now owe their continued existence to aggressive (and usually deceptive) "marketing strategies to keep filling their beds."[25]

Is it true, for instance, to say that these clinics do no more than entice patients away from conventional, and potentially curative, therapy? The Tijuana clinics, some assert, are a case of the unscrupulous misleading the uneducated. They are "capitalizing on people's vulnerabilities in their most desperate hours and [giving] them false hope."[49] However, there are some reasonable arguments to support the continued existence and functioning of the border clinics and to encourage the inclusion of clinic directors in the broader dialogue between CAM and conventional medicine.

Dimensions of cancer crisis. First, cancer remains a tremendous and unsolved problem throughout the world. In the United States in 2004, 563,700 US patients died of the disease. Worldwide, more than 6.2 million die of cancer each year. According to the World Health Organization, worldwide incidence could increase by 50% to 15 million by the year 2020.[50] Nor is there an end in sight to this growing problem.[51] Under such circumstances, there is a pressing need for an expanded (not a constricted) list of treatment options.

Freedom of choice. Ethical and financial abuses sometimes take place in Tijuana under the rubric of freedom of choice. There is certainly a need for consumer protection against criminal activities. But this should not distract us from the fact that sane and sentient adults also have a fundamental right to seek medical treatments beyond the scope of current conventional practice. The role of government should be to facilitate, rather than restrict, the exercise of freedom of choice by its citizens. (This includes the right of individuals to seek not only alternative treatments but also effective mainstream treatments that have been denied them.)

Need for experimental treatments. There are individuals who have rejected the defeatist pronouncements of their doctors and who have sought out experimental, but still solidly scientifically based, conventional treatments. Some have survived precisely because of their persistence. Their healing journeys have taken them to Germany, China or, yes, Tijuana. It is good to have options and to preserve—not limit—the reasonable choices that exist.

Some would argue that the choices offered in Tijuana should be banned precisely because, by current scientific standards, they are not reasonable. But

[‡]This study includes prayer as a form of "alternative medicine," which seems questionable. Nevertheless, 46% reported the use of 2 or 3 complementary treatments.

in medicine, what is deemed reasonable is often a matter of timing and opinion—or even, it must be said, of fashion. Hormone replacement therapy, high-dose chemotherapy for breast cancer, corticosteroids for brain injuries, rofecoxib (Vioxx) for arthritis pain—the list of now-discredited treatments is long and growing. Meanwhile, maggots, after a long hiatus, are back in vogue for the debridement of surgical wounds.[52]

There is simply no room for dogmatism in medicine. Even Laetrile, now widely scorned, may someday have to be reevaluated. Experiments performed in Great Britain, China, and Korea have shown that food-derived extracts of amygdalin effectively kill cancer cells and cause apoptosis in experimental systems.[53-55] Scientific knowledge of this finding—or even the technology to carry out the testing—did not exist at the height of the Laetrile controversy. In fact, apoptosis itself was not even discovered as a biological phenomenon until the 1970s.[56]

Medicine develops unevenly. There are profound national and cultural influences on medical choices.[57] There are cancer drugs that are approved in Europe and Asia that are not approved in the United States, and vice versa. For instance, in Japan, PSK, a polysaccharide derived from the *Coriolus versicolor* mushroom, is a legally approved adjunctive therapy, used by great numbers of patients over the past 30 years.[58] Even the ACS has admitted that "there is some scientific evidence from clinical trials which suggests that PSK may provide benefit to people with cancer, including increased survival rates and longer disease-free periods, without causing significant side effects."[59] Yet in the United States, it remains virtually unknown. Similarly, in Germany, mistletoe extract is often considered an effective immunomodulator, with a generally positive effect on cancer patients.[60] Yet in the United States, although legal, its use is considered strictly experimental at a few institutions.

Time lag in medicine. There is also a time lag between the discovery of an effective new treatment and its introduction into the US market. It takes 12 years on average for an experimental drug to travel from lab to clinic.[61] Many worthwhile treatments cannot survive the costly drug development and FDA regulatory process. Thus, timely approval is ultimately based as much on economic considerations as on a drug's therapeutic potential. CAM clinics, such as those in Mexico, may make new treatments available before formal FDA approval. Understandably, this may disturb the regulatory authorities but may be desirable from the point of view of an individual patient fighting cancer.

Clinics pioneer new treatments. The track record shows that in the past, some Tijuana clinics have pioneered valid new treatments before they were widely used in the United States. Some Tijuana clinics were quick to adopt bisphosphonates, which have the ability to inhibit bone resorption. A relatively inexpensive Finnish product, clodronate (Bonefos), was put into use at the Santa Monica Hospital in Rosarito Beach in the late 1980s.

"The good news is that there is finally an effective treatment for bone cancer," wrote Ross Pelton, RPh, PhD, who was then administrator of that clinic. "The bad news is that clodronate is not directly available in the United States."[62] The FDA did not approve the first bisphosphonate for treating cancer, pamidronate (Aredia), until 1994. Thus, for 7 years, cancer patients who went to Mexico were able to get bisphosphonates for the treatment of bone metastases, before the FDA approved the use of these drugs. Meanwhile, the FDA was searching for and seizing clodronate coming illegally across the San Ysidro border.[63]

Low-Dose Chemotherapy

When I visited Dr Contreras in 1976, he described the use of low doses of standard chemotherapeutic drugs. I was astonished since most oncologists were then trying to increase the dosage of these same drugs to the maximum tolerable level.[64] I have since seen low-dose chemotherapy in use at many CAM clinics around the world. In their 1991 article, the ACS had noted that "several clinics advertised low-level or 'micro-dose' chemotherapy. Small doses of standard cytotoxic agents are administered with the claim that when they are used in conjunction with other aspects of metabolic therapy, the effectiveness of standard doses can be retained while eliminating side effects."[30]

Oncologists scornfully characterized this as "killing patients with misguided kindness."[65] Such scientists, focused on the cytotoxic effects of high-dose chemotherapy, could not believe that these drugs could have cytostatic effects when given at lower dose. Contreras and other CAM physicians had made this empirical observation. The rationale came only later: the same drugs that were tumoricidal at high doses inhibited angiogenesis in lower concentrations and prevented the development of drug resistance.[66,67]

American CAM Centers Versus Tijuana Clinics

Finally, many people feel that CAM has become so widely available in the United States, even at National Institute of Cancer–approved comprehensive cancer centers, that there is no longer a need for the existence of separate alternative clinics, such as those in Tijuana. This perception is undoubtedly one of the

factors leading to diminished enrollment in the clinics as a whole.

But CAM clinics at major US centers do not generally provide treatments that challenge the dominant paradigms of tumor ablation and systemic cytotoxicity. One major center describes its own CAM program as follows: "In treating disease, complementary therapies are not substitutes for mainstream medical care; they are used in concert with medical treatment to help alleviate stress, reduce pain and anxiety, manage symptoms, and promote a feeling of well-being."[68] This essentially turns CAM into a subservient adjunct to surgery, radiotherapy, and cytotoxic chemotherapy. The irony is that CAM programs exist in conventional cancer centers today only because of the determined fight put up in previous decades by the medical freedom-of-choice movement. Yet these centers now return to the health consumer a devitalized version of alternative medicine: restricted choices contained within limits set by the conventional oncology community and policed by the FDA.

In summary, these in-house CAM centers do not present any fundamental challenge to conventional approaches, nor do they make any attempt to change the treatment paradigm. It is no surprise that the developers of the so-called "integrative" program cited above are themselves vocal opponents of alternative medicine in general and the Mexican border clinics in particular.

Unity and Struggle in the Tijuana Clinics

Even today, there is little contact between the competing Tijuana clinics. Clinic owners often hardly know, or express interest in, what is happening at neighboring centers. There is also no group or even individual who maintains an overview of the entire clinic phenomenon. The clinics have never joined together for any purpose, not even their own self-defense. In the late 1980s, when the US Office of Technology Assessment had drafted a potentially harmful report, Michael Culbert (then vice president of American Biologics Hospital) attempted to form a "united front" of clinics to represent their common interests in this struggle. He got nowhere.[§]

In the past dozen years, as is well known, there has been a fundamental change in the attitude of the National Institutes of Health toward nonconventional treatments. Funding for studies at the National Center for Complementary and Alternative Medicine has gone from $2 million in FY 1992 to a proposed $121.1 million in FY 2005. In addition, the National Cancer Institute's Office of Cancer Complementary and Alternative Medicine has put out a call for clinics and doctors to provide it with "best case series" for critical review.[69] Yet to my knowledge, only 1 Mexican clinic director has responded (Donato Perez Garcia III, MD).[70]

The National Foundation for Alternative Medicine (NFAM), whose mission is to seek out effective CAM treatments, sent a team to evaluate 5 Mexican clinics in January and February 2000. The clinics were asked to submit records for evaluation in a best case series research study, to be funded by the NFAM. This initiative was equally unsuccessful. One of those who took part has attributed this failure to a fundamental lack of interest on the part of most clinic directors (Gar Hildenbrand, personal communication, October 18, 2004).

A few clinic directors do participate in the normal dialogue that takes place among CAM practitioners. For example, my last visit to Tijuana happened to coincide with the annual meeting of the International Society for Clinical Hyperthermia. It was encouraging that several of the doctors whom I was scheduled to see had to postpone interviews because they were in China for this important meeting. One clinic doctor (G. Alvarez) has explicitly expanded his program to include treatments discussed at the yearly "Medicine Week" meetings in Baden-Baden, Germany. The Issels Program's hematology/oncology specialist, Raul Morales, MD, will address the Mexican Society of Hematology's 2005 annual conference on the use of PUVA photopheresis with live dendritic cells that are frozen for extended treatment (Gar Hildenbrand, personal communication, November 15, 2004). But these are exceptions to the rule.

Will the Tijuana clinics survive in the post-NAFTA environment? Or will the combined police forces of 3 countries (directed by the Mexico-US-Canada Health Fraud Work Group) continue to prosecute them, one by one, until there are no alternative clinics left?

The Mexican clinic directors would be wise to study the example of their German colleagues. In Germany, CAM doctors are united through their participation in a number of organizations, such as the aforementioned Medicine Week (Medizinische Woche), the German Society of Oncology (Deutsche Gesellschaft für Onkologie), and the 20,000-member-strong Society for Biological Defense Against Cancer (Gesellschaft für Biologische Krebsabwehr). There are 2 German medical journals devoted to integrative oncology.

The powerful opponents of the Tijuana clinics are now united as never before, but clinic supporters do

[§]One exception was Gar Hildenbrand, then a clinical epidemiologist for the Gerson Institute. But Hildenbrand was already a member of the Office of Technology Assessment's advisory panel on the project.

not have a single coordinating body to respond to this new situation. It is essential to realize that NAFTA and globalization are present realities that are unlikely to go away.[71] If the clinics are to survive, it will necessarily be in the new multinational environment in which they now find themselves. To do so, they must conform to certain minimum standards, without which they are unlikely to generate widespread political support against inevitable attacks.

What Are These Minimum Standards?

The greatest problem is a boastful exaggeration of the clinics' actual success in treating cancer.

- IBC states, "We assume 95 percent of patients will have some kind of positive response."[72]
- The Issels program states, "Early data suggest a universal responsiveness."[72]
- CHIPSA claims its results are uniformly better than orthodox treatment for the major cancers of adults.[72]

These are among the more restrained assertions heard over the years. Clinic director Hulda R. Clark, PhD, even wrote a popular book claiming that her treatment was a "cure for all cancers." Where are the peer-reviewed studies to substantiate such claims? Most clinics do not follow their former patients, keep no tabulated outcome data, conduct no phase I/II studies, and certainly sponsor no randomized controlled trials. None of the clinic doctors, to my knowledge, have published outcome studies in the PubMed-listed literature. The doctors at Oasis of Hope Hospital once wrote what they incorrectly characterized as a "phase III study" of inoperable lung cancer patients treated with Laetrile (amygdalin). They claimed that 55.25% of such patients survived 12 or more months. Prepared as part of an application for drug approval in Mexico, it was never published in a standard journal, and the text is available only at a promotional Web site.[73]

Few clinic doctors have sought out academic collaboration with more established medical centers or attempted to influence the wider debate in society over the direction of cancer treatment. For the most part, these doctors are, and seem intent on remaining, isolated medical anomalies. One major exception was the retrospective review performed by Gar Hildenbrand et al, on the results of the Gerson dietary program in melanoma.[74] This was a carefully conducted review of case records carried out under difficult circumstances. Unfortunately, the other Tijuana clinic leaders have not copied this promising example.

Here are some proposals for reform of the Mexican clinics as a whole:

1. Research: Clinics need to stop making unsubstantiated claims on the efficacy of their treatments. They need to keep detailed computerized records and to conduct regular retrospective reviews of treatment outcomes for various kinds of cancer and to publish these in PubMed-listed peer-reviewed journals.
2. Physical plant: Clinics need to set acceptable standards for their physical plant. This should include regular independent inspections of all equipment, backup machinery and generators, water purification, and so forth. Where appropriate, they should apply for membership in the American Hospital Association—a necessary prerequisite, incidentally, for third-party reimbursement.
3. Finances: Clinics need to practice greater financial transparency. Financial records should be reviewed and audited by outside accounting firms. Patients should be told in writing, up front, of all the likely or possible charges they may incur (including taxes, companion fees, etc). They must then be presented with an itemized bill. Clinics should not misrepresent the likelihood of insurance reimbursement and participate in schemes to mislead insurance companies about the nature of the treatment. And in general, charges need to be lowered until they at least equal those found in comparable European facilities.
4. Ethics: Patients have a right to full informed consent, including the exact nature of every treatment given to them. An institutional review board (IRB) should be established for the Tijuana clinics to examine the suitability of proposed treatments for human subjects. This IRB should be made up of physicians, scientists, activists, and ethicists from the 3 NAFTA countries, who are sympathetic to their holistic approach but unaffiliated with the clinics themselves.
5. Education: Clinic directors and doctors should pursue further education in conventional as well as complementary medicine. To overcome their isolation, they should attend ASCO meetings and participate in American and international organizations where CAM approaches to oncology are discussed. They should also sponsor scientific meetings in the Tijuana area itself to present their therapeutic and diagnostic ideas to a wider audience.

A refusal by the clinics to adjust to the demands of the times will fuel further coordinated crackdowns, until finally there is little left of the promising initiative started more than 40 years ago by the founders of the field. But for those clinic directors who choose to embrace change, the future is more promising. A reformed Tijuana clinic movement might be not only able to survive but also to contribute to modern CAM treatment in the post-NAFTA environment.

Acknowledgment

I wish to thank the following individuals who gave interviews and/or commented on drafts of this article:

Gilberto Alvarez, MD; Professor Robert Bradford; John Fink; Norman Fritz; Donato Perez Garcia III, MD; Charlotte Gerson; Professor David Hess; Gar Hildenbrand; Antonio Jimenez, MD; Rodrigo Rodriguez, MD; and Victor Ortuño, MD. All remaining errors are my own. I wish to acknowledge the contribution of Michael Culbert, DSc, who died unexpectedly on September 11, 2004, the day after I interviewed him in Tijuana. Special thanks as always to Dr Louise Lubetkin.

References

1. Crabtree P, Dibble S. Borderline medicine: Tijuana alternative clinics frustrate regulators. *San Diego Union-Tribune*, February 24, 2002. Available at: http://utawards.signonsandiego.com/borderline_medicine.html. Accessed September 17, 2004.
2. Harris R. *Real Voice: Kefauver Drug Hearings*. Englewood Cliffs, NJ: Regents/Prentice Hall; 1981.
3. About DSI. Division of Scientific Investigations, Food and Drug Administration, May 21, 2004. Available at: http://www.fda.gov/cder/Offices/DSI/aboutUs.htm. Accessed October 23, 2004.
4. Vissing YM, Petersen JC. Taking Laetrile: conversion to medical deviance. *CA Cancer J Clin*. 1981;31:365-369.
5. Chowka PB. Mildred Nelson, RN: one year after her death, the Hoxsey therapy lives on. February 1, 2000. Available at: http://naturalhealthline.com/newsletter/01feb00/nelson.htm. Accessed October 9, 2004.
6. Austin S, Dale EB, DeKadt S. Long term follow-up of cancer patients using Contreras, Hoxsey, and Gerson therapies. *J Naturopath Med*. 1994;5:74-76.
7. Richardson MA, Russell N, Sanders T, et al. Assessment of outcomes at alternative medicine cancer clinics: a feasibility study. *J Altern Complement Med*. 2001;7:19-32.
8. Young JH. Laetrile in historical perspective. In: Markle GE, Petersen JC, eds. *Politics, Science and Cancer: The Laetrile Phenomenon*. AAAS Selected Symposium 46. Boulder, Colo: Westview; 1980: 1-60.
9. Wilson B. The rise and fall of Laetrile. Revised February 17, 2004. Available at: http://www.quackwatch.org/01QuackeryRelatedTopics/Cancer/laetrile.html. Accessed October 13, 2004.
10. McGrady PM Jr. The American Cancer Society means well, but the Janker Clinic means better. *Esquire*. April 1976. Available at: http://www.canhelp.com/articles/. Accessed October 22, 2004.
11. Kittler G. *Laetrile: Nutritional Control for Cancer*. Denver, Colo: Royal Publications; 1978.
12. Barrett S. Manner metabolic therapy. Quackwatch Web site. July 1, 2001. Available at: http://www.quackwatch.org/01QuackeryRelatedTopics/Cancer/manner.html. Accessed October 20, 2004.
13. Manner H, DiSanti SJ, Michalsen TL. *The Death of Cancer*. Chicago, Ill: Advanced Century Publishing; 1979.
14. PDQ, National Cancer Institute. Laetrile/amygdalin: questions and answers. June 12, 2002. Available at: http://cis.nci.nih.gov/fact/9_3.htm. Accessed October 24, 2004.
15. Moertel CG, Fleming TR, Rubin J, et al. A clinical trial of amygdalin (Laetrile) in the treatment of human cancer. *N Engl J Med*. 1982;306:201-206.
16. Ward PS. History of the Gerson therapy. Contract report prepared for the US Office of Technology Assessment. Washington, DC: Government Printing Office; 1988. Available at: http://gerson-research.org/docs/WardPS-1988-1/. Accessed October 22, 2004.
17. Hess D. *Evaluating Alternative Cancer Treatments*. New Brunswick, NJ: Rutgers University Press; 1999.
18. Straus H. *Max Gerson: Healing the Hopeless*. Kingston, Ontario, Canada: Quarry Press; 2002.
19. Charles, Prince of Wales, President, Foundation for Integrated Health. Presented at: Complementary Therapies and Cancer Care: A Research Symposium; The Royal College of Obstetricians and Gynaecologists; Sussex Place, London; June 24, 2004. Available at: http://www.princeofwales.gov.uk/speeches/health_24062004.html. Accessed October 20, 2004.
20. Chowka P. Action against two Tijuana cancer clinics casts doubt on the future of CAM south of the border. *Natural HealthLine*. March 1, 2001. Available at: http://naturalhealthline.com/newsletter/1mar01/tijuana.htm. Accessed September 17, 2004.
21. BioPulse International, Inc. (BIOP) announces Dr. Reid Jilek promoted to chairman of the board and CEO. Available at: http://www.biospace.com/news_story.cfm?StoryID=4176104&full=1. Accessed October 22, 2004.
22. Smallen D. Bureau of Transportation Statistics (BTS). July transportation services index (TSI): combined index and passenger index at new highs. Available at: http://www.bts.gov/press_releases/2004/bts027_04/html/bts027_04.html. Accessed October 21, 2004.
23. Crabtree P, Dibble S. Borderline medicine: Tijuana alternative clinics frustrate regulators. *San Diego Union-Tribune*. February 24, 2002. Available at: http://utawards.signonsandiego.com/borderline_medicine.html. Accessed September 17, 2004.
24. Nationmaster.com. Map & graph: government: corruption 2003 (top 100 countries). Available at http://www.nationmaster.com/graph-T/gov_cor_200. Accessed October 21, 2004.
25. Lerner M. A trip to the Tijuana cancer clinics. *Commonwealth Newsletter*. May 15, 2001. Available at: http://www.commonweal.org/old-site/bd_friends_5_15_2001.html. Accessed November 4, 2004.
26. Federal Trade Commission. FTC and FDA announce the adoption of an international agreement to combat health fraud. December 10, 1998. Available at: http://www.ftc.gov/opa/1998/12/health.htm. Accessed October 22, 2004.
27. Ciotti P. Faith, hope and fraud. *Los Angeles Times*. December 15, 1991. Available at: http://www.karlloren.com/Jimmy_Keller/page9.htm. Accessed October 21, 2004.
28. Landers SJ. Cancer center called sham, closed down. AMNews.com. March 10, 2003. Available at: http://www.ama-assn.org/amednews/2003/03/10/hlsa0310.htm. Accessed October 22, 2004.
29. Federal Trade Commission. FTC and FDA announce the adoption of an international agreement to combat health fraud. December 10, 1998. Available at: http://www.ftc.gov/opa/1998/12/health.htm. Accessed October 22, 2004.
30. American Cancer Society. Questionable cancer practices in Tijuana and other Mexican border clinics, 1991. *CA Cancer J Clin*. 1991;41:310-319.
31. Crabtree P, Dibble S. No insurance against fraud: false claims often flourish alongside unproven therapies. *San Diego Union-Tribune*. February 24, 2002. Available at: http://www.signonsandiego.com/news/reports/tjclinics/20020224-9999-insurance.html. Accessed October 20, 2004.
32. Canon S. Medical Mecca? Tijuana clinics draw plain people. *Kansas City Star*. October 22, 1996. Available at: http://www.kcstar. com/plain/stories/amish22.htm. Accessed October 13, 2004.
33. Moss R. *Herbs Against Cancer*. New York, NY: Equinox; 1998.
34. McNeil C, Collinson F, Smith K, et al. Delay in conventional breast cancer treatment associated with alternative therapy usage [abstract]. *J Clin Oncol*. 2004;22(14S):593. Abstract 593.

35. Moss RW. 2004 ASCO meeting, part one. *Cancer Decisions Newsletter*. June 13, 2004. Available at: http://www.cancerdecisions.com/061304_page.html. Accessed October 23, 2004.
36. Girardi M, Schechner J, Glusac E, Berger C, Edelson R. Transimmunization and the evolution of extracorporeal photochemotherapy. *Transfus Apheresis Sci*. 2002;26:181-90.
37. Hoption Cann SA, van Netten JP, van Netten C, Glover DW. Spontaneous regression: a hidden treasure buried in time. *Med Hypotheses*. 2002;58:115-119.
38. Contreras F. Biographical statement. Cancer Control Society speakers, 31st Annual Cancer Convention, 2003. Available at: http://www.cancercontrolsociety.com/bio2003/contreras.html. Accessed October 23, 2004.
39. Rodriguez R. Biographical statement. Cancer Control Society speakers, 31st Annual Cancer Convention, 2003. Available at: http://www.cancercontrolsociety.com/bio2003/rodriguez.html. Accessed October 23, 2004.
40. Clemenceau Valdivia J-R. First SMEO Mexican patient seminar Mexican: oncologists reaching out to patients. *ESMO Newsletter*. January-March 2004. Available at: www.esmo.org/news/pdf/NL0104.pdf. Accessed October 20, 2004.
41. Staffing firm reports physicians' salaries growing. *Modern Healthcare*. June 24, 2002. Available at: http://modernhealthcare.com/login.cms. Accessed October 22, 2004.
42. Pousson P. What's it like to go to a Mexican hospital for cancer treatment? Available at: http://www.alternative-cancer.net/index.html. Accessed October 21, 2004.
43. Lowell JA. Mexican cancer clinics. In: Barrett S, Cassileth BR, eds. *Dubious Cancer Treatment*. Tampa, Fla: American Cancer Society, Florida Division; 1991.
44. Smith L. Quacky Mexican clinics. CancerGuide Web site, 2001. Available at: http://www.cancerguide.org/lsmith_hulda.html. Accessed October 19, 2004.
45. Leaf C. Why we're losing the war on cancer—and how to win it. *Fortune*. March 9, 2004. Available at: http://www.fortune.com/fortune/articles/0,15114,598425,00.html. Accessed October 25, 2004.
46. von Eschenbach AC. A vision for the national cancer program in the United States. *Nat Rev Cancer*. 2004;4:820-828.
47. Cassileth BR. The Integrative Medicine Service at Memorial Sloan-Kettering Cancer Center. *Semin Oncol*. 2002;29:585-588.
48. Yates J, Morrow G, Mustian M, et al. Are cancer patients utilizing complementary therapies? A URCC CCOP study. *J Clin Oncol*. 2004;22:8157.
49. Soto OR, Dibble S. Operators of Tijuana clinic arrested on fraud charges. *San Diego Union-Tribune*. May 20, 2004. Available at: http://www.signonsandiego.com/news/business/20040520-9999-1b20cancer.html. Accessed October 24, 2004.
50. World Health Organization. Global cancer rates could increase by 50% to 15 million by 2020. Available at: http://www.who.int/mediacentre/news/releases/2003/pr27/en/. Accessed October 28, 2004.
51. Epstein SS. Legislative proposals for reversing the cancer epidemic and controlling run-away industrial technologies. *Int J Health Serv*. 2000;30:353-371.
52. Mumcuoglu KY. Clinical applications for maggots in wound care. *Am J Clin Dermatol*. 2001;2:219-227.
53. Syrigos KN, Rowlinson-Busza G, Epenetos AA. In vitro cytotoxicity following specific activation of amygdalin by beta-glucosidase conjugated to a bladder cancer-associated monoclonal antibody. *Int J Cancer*. 1998;78:712-719.
54. Kwon HY, Hong SP, Hahn DH, Kim JH. Apoptosis induction of persicae semen extract in human promyelocytic leukemia (HL-60) cells. *Arch Pharm Res*. 2003;26:157-161.
55. Fukuda T, Ito H, Mukainaka T, et al. Anti-tumor promoting effect of glycosides from Prunus persica seeds. *Biol Pharm Bull*. 2003;26:271-273.
56. Kerr JF, Wyllie AH, Currie AR. Apoptosis: a basic biological phenomenon with wide-ranging implications in tissue kinetics. *Br J Cancer*. 1972;26:239-257.
57. Payer L. *Medicine and Culture: Revised Edition*. New York, NY: Owl Books; 1996.
58. Shibata M, Suzuki M, Abe H, et al. Immunomodulatory effects and survival benefit of low dose cisplatin combined with UFT and PSK [abstract]. *Proc Am Soc Clin Oncol*. 2003;22:357. Abstract 1433.
59. American Cancer Society. Coriolus versicolor. Available at: www.cancer.org/docroot/ETO/content/ETO_5_3X_Coriolous_Versicolor.asp?sitearea=ETO. Accessed October 19, 2004.
60. Beuth J, ed. *Grundlagen der Komplementär-onkologie: Theorie und Praxis*. Stuttgart, Germany: Hippocrates Verlag; 2002.
61. Alliance Pharmaceuticals. Phases of product development, 2004. Available at: http://www.allp.com/drug_dev.htm.
62. Pelton R, Overholser L. *Alternatives in Cancer Therapy: The Complete Guide to Non-traditional Treatments*. New York, NY: Fireside; 1994.
63. McLearn D. Federal-state investigation of illegal drugs. Available at: http://www.fda.gov/bbs/topics/ANSWERS/ANS00495.html. Accessed October 22, 2004.
64. Bertolini F, Paul S, Mancuso P, et al. Maximum tolerable dose and low-dose metronomic chemotherapy have opposite effects on the mobilization and viability of circulating endothelial progenitor cells. *Cancer Res*. 2003;63:4342-4346.
65. Shaving chemotherapy: killing patients with kindness. *Med World News*. 1986;27:24-25.
66. Browder T, Butterfield CE, Kraling BM, et al. Antiangiogenic scheduling of chemotherapy improves efficacy against experimental drug-resistant cancer. *Cancer Res*. 2000;60:1878-1886.
67. Hanahan D, Bergers G, Bergsland E. Less is more, regularly: metronomic dosing of cytotoxic drugs can target tumor angiogenesis in mice. *J Clin Invest*. 2000;105:1045-1047.
68. Memorial Sloan-Kettering Cancer Center. Integrative medicine. Available at: http://www.mskcc.org/mskcc/html/1979.cfm. Accessed December 9, 2004.
69. White JD. The National Cancer Institute's perspective and agenda for promoting awareness and research on alternative therapies for cancer. *J Altern Complement Med*. 2002;8:545-550.
70. Cancer Advisory Panel for Complementary and Alternative Medicine, National Institutes of Health. Minutes of the third meeting, September 18, 2000. Available at: http://nccam.nih.gov/about/advisory/capcam/minutes/2000sept.htm. Accessed November 5, 2004.
71. Friedman T. *The Lexus and the Olive Tree*. New York, NY: Farrar, Straus & Giroux; 2000.
72. Fink J. *Third Opinion: An International Directory to Alternative Therapy Centers for the Treatment and Prevention of Cancer & Other Degenerative Diseases*. 4th ed. Garden City Park, NY: Square One Publishers; 2004.
73. Rodriguez EC, Pulido JEC, Price AM. Phase III study of inoperable lung cancer: antitumoral effects of amygdalin in patients with inoperable lung cancer. Available at: www.worldwithoutcancer.org.uk/analysis13.html. Accessed November 23, 2004.
74. Hildenbrand GL, Hildenbrand LC, Bradford K, Cavin SW. Five-year survival rates of melanoma patients treated by diet therapy after the manner of Gerson: a retrospective review. *Altern Ther Health Med*. 1995;1:29-37.