SCHOOL OF LAW
CASE WESTERN RESERVE UNIVERSITY

Health Matrix: The Journal of Law-Medicine

Volume 16 | Issue 2

2006

The Future of Telemedicine & Its Faustian Reliance on Regulatory Trade Barriers for Protection

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THE FUTURE OF TELEMEDICINE & ITS FAUSTIAN RELIANCE ON REGULATORY TRADE BARRIERS FOR PROTECTION

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INTRODUCTION

Telemedicine is revolutionizing the practice of medicine. Digitalization of medical data in virtually every medical discipline, coupled with recent advancements in telecommunications, means that physicians are no longer required to reside on the same continent as their patients.[1] High-tech telemedical systems have already allowed providers in India to capture 2 percent of the U.S. health care market.[2] Thus, in 2003, $340 million moved from the United States to India to cover just the cost of outsourced medical transcription and billing.[3] This dollar value for trade-in-telemedical services would be substantially higher if it were possible to get a handle on the teleradiology market.[4]

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[1] *See, e.g.*, Thomas R. McLean, *The Offshoring of American Medicine: Scope, Economic Issues, and Legal Liabilities*, 14 ANNALS HEALTH L. 205 (2005). *See also* Mehran Anvari, *Remote Telepresence Surgery*, 4 LAPAROSCOPY TODAY 5, 5-7 (2005) (experience with non-physician astronauts suggest that telemedicine supervision of physician extenders may allow the latter to perform surgical procedures thereby eliminating the need for local physicians).

[2] WORLD HEALTH ORG: INDIA OFFICE, NEW DELHI, COUNTRY REPORT FOR MODE 1: CROSS-BORDER TRADE IN HEALTH SERVICES – (E-HEALTH): INDIA – COUNTRY LEVEL REPORT 65 (July 2003), *available at* http://www.whoindia.org/en/section2/section233_538.htm [hereinafter WHO INDIA REPORT] (draft working paper).

[3] *Id.* at 64.

[4] Presently, it does not appear that reliable estimates for the size of the tel-

Moreover, given the size of the U.S. health care market, it is not a surprise that India believes its use of telemedicine has only tapped into the "tip of the e-health iceberg" of the trade-in-medical-services[5]—an iceberg that appears to only enlarge as corporate America searches for a way to tap into a low-wage labor pool of providers to hold down health and pension expenses.[6] In short, the stage has been set for America to offshore many of its medical provider positions.[7] But for medical providers whose jobs may vanish, just like the jobs of the blue collar workers in the 1970s and the white collar workers in the early 1990s, the question now becomes: How do we as a nation protect our medical jobs from being moved offshore?

While several methods exist to limit market access[8] and thereby protect a market from competition, the preferred method of protecting the U.S. health care market from foreign providers is the erection of trade barriers, i.e., "regulations and measures imposed by [governmental agencies] that unduly impede trade in goods or services, in export or import."[9] Unfortunately, in an era of global trade, when a country uses a trade barrier, that country does little more than buy

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eradiology market exist. This undoubtedly reflects the fact that teleradiology, and more generally telemedicine, is currently being provided primarily by a small number of private companies and not-for-profit organizations that do not have a duty to file public reports.

[5] WHO INDIA REPORT, *supra* note 2, at 63. As the cost of telecommunications time falls, the volume of medicine practiced in cyberspace is expected to steadily rise. *See* Ronald C. Merrell, *Telemedicine and Telesurgery in the Operating Room*, 90 BULL. AM. C. SURGEONS 8, 9-13 (2005). America Online Inc.'s entry into the telemedical market will cause costs to fall faster. *See AOL to Start VOIP Service*, L.A. TIMES, Apr. 7, 2005, at C3 (providing AOL's plan to roll out voice over Internet protocol (VOIP) services).

[6] McLean, *supra* note 1, at 215. Partially due to medical expenses, the corporate bonds of some of America's stalwart manufacturers have been degraded to junk bond status. Rick Popely, *GM, Ford Bonds Are Driven to Junk Yard: S&P Lowers Rating in Latest Blow to Icons*, CHI. TRIB., May 6, 2005, at C1. As a result of this degradation, corporate America appears to have become almost desperate to control medical expenses. Greg Burns, *Health-care Costs Targeted as Cure for Corporate Ills: As Medical Expenses Soar, More Companies Are Seeking to Shift Burden to Individuals*, CHI. TRIB., May 7, 2005, at C1.

[7] McLean, *supra* note 1, at 215 (discussing in detail the rationale for the potential outsourcing of virtually all professional medical positions).

[8] For instance, market access could be limited because of the capital costs required to enter the market, knowledge monopolies, sustained disruption of transportation or communication networks, and through the implementation of regulations that raise transaction costs to prohibitive levels.

[9] Ministry of Trade & Indus., What are Barriers to Trade?, http://192.49.226.41/ktm/kaupaneste/e_kaupaneste.html (last visited Feb. 16, 2006). More generally, a trade barrier is any device used by a government to impede the establishment of a new industry. New York v. United States, 331 U.S. 284, 308 (1947).

itself some time because the competition in international trade quickly learns to neutralize trade barriers.[10] Accordingly, when a country protects a market with a trade barrier, those in that market must accept that they have entered into a Faustian deal. That is, just as in Goethe's classic tale, Dr. Faustus learns after several years of youth and prosperity that the devil must be paid, so too must health care providers realize that after a number of years of domestic telemedicine prosperity due to trade barriers, other nations will have to be paid. These two situations differ primarily in the method of payment: Goethe's story concerns a transaction in souls, whereas telemedicine concerns transactions in money and jobs.

Yet, there is more to the story of the globalization of medicine: international trade treaties. While most in the health care sector have never contemplated international trade treaties, the time has come for health care providers to familiarize themselves with the basic concepts of international law. Not only does telemedicine raise international trade concerns, but international trade treaties are also likely to impact state licensure and insurance requirements. In fact, because trade barriers in the form of state licensure and insurance requirements are the fundamental method by which the United States protects its domestic telemedical market from low-wage foreign providers, international trade treaties have the potential to fundamentally alter the way medicine is practiced.

Accordingly, this article examines the coming age of international telemedicine. It seeks to stimulate discussion on this subject rather than to be a comprehensive or definitive policy paper. Part I provides an overview of the operational nuts and bolts of a telemedical practice to demonstrate that the financial barriers are minimal to enter the telemedicine marketplace. Part II takes a detailed look at the regulatory trade barriers that are the principle means by which U.S. telemedical providers seek to protect their market from foreign competition. For multiple reasons, including multilateral international trade agreements, the ability of trade barriers to protect the domestic tele-

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[10] *See* THOMAS L. FRIEDMAN, THE LEXUS AND THE OLIVE TREE 33, 169, 358-60 (1999) (defining "globalization" as the current international system integrating the world); Julian Epstein, *The Other Side of Harmony: Can Trade and Competition Laws Work Together in the International Marketplace?*, 17 AM. U. INT'L L. REV. 343, 343 (2001-2002) (trade barriers represent an antiquated notion that encourages "gamesmanship in the international trading arena"); *and* Marc S. Ehrlich, Comment, *Towards a New Dialogue Between International Relations Theory and International Trade Theory*, 2 UCLA J. INT'L L. & FOREIGN AFF. 259, 265 (1997-1998) (today free trade, and not trade barriers "provide the richest benefits and highest efficiency in a self-regulating global marketplace").

medical market will decline with time. Next, Part III examines the General Agreement on Trade in Services (GATS)[11] and the North American Free Trade Agreement (NAFTA)[12] to illustrate how multilateral international trade agreements will likely impact the telemedical market.[13] In particular, the discussion will focus on how multilateral international trade agreements will act to weaken the state laws that serve as trade barriers. Finally, Part IV looks at the future of telemedicine as we move into a world of global trade in telemedicine. For the United States, this will mean that the national medical licensure will likely supplant the existing state licensure system for multiple reasons, including America's desire to purchase health care services from low-wage providers abroad, as it seems we can no longer afford to purchase health care from U.S. providers.[14] In conclusion, this article observes that while the erection of trade barriers to protect the U.S. domestic telemedical market may be prudent today, we must look for more durable solutions to protect our domestic telemedicine market if America is to retain its hegemonic position in health care.

I. TELEMEDICINE TODAY

A. Technology: All Systems Are Go

Technology is no longer a barrier to entering the telemedicine marketplace. Historically, as the videophone demonstrates, bringing technology to market can be a significant barrier to trade. Although a prototype videophone was demonstrated at the New York World Fair in 1964, it was not until 1993 that the videophone was brought to the market.[15] But today we are long past the lag phase associated with

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[11] General Agreement on Trade in Services, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1B, Legal Instruments—Results of the Uruguay Round, 33 I.L.M. 44 (1994) [hereinafter GATS].

[12] North American Free Trade Agreement, U.S.-Can.-Mex., Dec. 17, 1992, 32 I.L.M. 289 (1993) [hereinafter NAFTA].

[13] GATS and NAFTA are not the only international agreements that have potential impact on telemedicine. Discussion of these trade agreements that impact medicine (including the World Trade Organization's Trade Related Intellectual Property and Services, and the recently enacted Central American Free Trade Agreement) is beyond the scope of this article.

[14] McLean, *supra* note 1, at 225; Thomas R. McLean, *Medical Rationing: The Implicit Result of Leadership by Example*, 36 J. HEALTH L. 325, 334-35 (2003) (examining the impact on the quality of government health care purchasing and selecting overseas providers as a potential solution).

[15] BD. ON SCI., TECH. & ECON. POLICY, NAT'L RESEARCH COUNCIL, INTERNATIONAL FRICTION AND COOPERATION IN HIGH-TECHNOLOGY DEVELOPMENT AND TRADE: PAPERS AND PROCEEDINGS 177 (Charles W. Wessner ed., 1997) (analyz-

telemedical technologic development, be it videoconferencing between physicians or remote robotic surgery, as such technology is readily available for purchase. Yet, the real question for anyone contemplating entering the business of telemedicine is whether the technology is affordable.

The answer to this question is yes. The capital outlay required to enter the business of telemedicine today is, at worst, modest.[16] Hardware requirements are limited to the purchase of computers and access to a Virtual Private Network (VPN).[17] Today, Pentium Four computers, which sell for under $1,000, have sufficient speed and graphical revolution to support most, if not all, telemedical application programs.[18] How many computers are needed to be purchased up front depends on the volume of telemedical services a company is planning on providing. Conceptually, the purchase of a single Pentium Four computer, with a plan to purchase more computers as business cash flow improves, is all that is needed to enter the telemedical business. Capital must also be available for securing a VPN, which is a "fast, secure and reliable communications . . ." connection between the provider and the remote location.[19] More specifically, VPNs are composed of a high-speed telecommunication connection (a T1 line or better) that remains dedicated while data is transmitted over a specific set of routers; i.e., telecommunication switches.[20] VPN access, which can be purchased from a telephone company or an Internet Service Provider, has variable initial hook-up charges that can run anywhere

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ing, through differing international views, the effect of policy on technology). In part, this time lag from prototype to market is complicated by the tax code, which dictates how existing equipment is depreciated. *Id.* Various existing telephone switching mechanisms in 1964 required depreciation over twenty years, thus rendering the introduction of a new technology not cost-effective. *Id.* at 177-78.

[16] Conceptually, telemedicine contemplates a wide variety of services; from teleconsultations to cybersurgery. To simplify the discussion of this article wherever possible, examples of technology and cost are taken from the field of teleradiology. The selection of teleradiology over other telemedical services for example, was chosen for two reasons. First, teleradiology is the largest component of international telemedicine today. Second, in terms of complexity, and hence cost, teleradiology is roughly midway between teleconsultations and cybersurgery.

[17] E-mail from Jafar Amini, MD, Chief of the Radiology Section, Leavenworth VAMC, to Thomas R. McLean, CEO, Third Millennium Consultants, LLC (Mar. 21, 2005, 09:28) (on file with author).

[18] The cost of computing power has progressively fallen. Currently, securing a supercomputer's power costs $100,000. Om Malik, *The Super-Cheap Supercomputer*, BUS. 2.0, May 2005, at 30 (analyzing the falling cost of "supercomputers").

[19] Jeff Tyson, *How Virtual Private Networks Work*, HOWSTUFFWORKS.COM, http://computer.howstuffworks.com/vpn.htm (last visited Jan. 30, 2006) (explaining the intricacies of different types of virtual private networks).

[20] *Id.*

from $100 to $10,000, depending on the system's security features and the number of routers required.[21] However, once operational, VPNs are cheap to operate, costing less than one cent per minute.[22]

In contrast to hardware requirements, the biggest expenses associated with starting up a telemedical business are the purchase of software and the cost to secure a contract to provide telemedical services. Imaging software available at retail outlets, like the popular Photoshop,[23] provide images with insufficient resolution for telemedicine and special medical-grade imaging software is needed.[24] Like any software, the price of medical-grade imaging software is variable ($30,000–$200,000), depending on the brand name of the product and editing features desired.[25] The other major expense associated with the opening of a telemedical business is the cost of the opportunity; i.e., the cost of negotiating the contract. If one has to fly around the country to wine and dine hospital CEOs to negotiate a contract, this can quickly become expensive. On the other hand, if a reputable physician has a good existing relationship with a hospital CEO, the cost to secure a contract may be minimal. In short, in the best case scenario, where a physician has an existing relationship with a hospital, the physician could potentially start a telemedical business with an investment of as little as $150,000 to cover the cost of the computer, VPN, and software.

Given that minimal start-up capital is required to gain access to the telemedical marketplace, it is not surprising that many providers have already entered the field. In fact, so many providers have entered the field that it is already possible to discern two operational paradigms for providing telemedical services: the nighthawk[26] and the

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[21] *See id. See also* Telephone Interview with Lynda A. Cleveland, Telecommunication Attorney, in Overland Park, Kan. (Mar. 23, 2005).

[22] Telephone Interview with Lynda A. Cleveland, *supra* note 21. Cost figures are based on the cost to purchase service in the United States and may be lower if purchased in another country.

[23] Adobe Photoshop CS2, Product Overview, http://www.adobe.com/products/photoshop/overview.html (last visited Feb. 14, 2006).

[24] E-mail from Jafar Amini, MD, *supra* note 17.

[25] *Id.* The cost of telemedical data is difficult to estimate, and therefore outside of the scope of this article. *See* Randall Stross, *Whoops! We Seem to Have Misplaced Your Identity*, N.Y. TIMES, May 8, 2005, at BU5 (observing that because of the transmission time required to store large amounts of data, even with T1 lines, digital data on CDs and tapes is being trucked to long-term storage areas).

[26] This brief composite description is based on the viewing of several telemedical web pages. *See, e.g.*, Nighthawk Radiology Servs., About Nighthawk Radiology Services, http://www.nighthawkrad.net/ (last visited Mar. 13, 2006); Am. Radiology Servs., Inc., http://www3.americanradiology.com/pls/web1/wwmain.home (last visited Mar. 13, 2006); *and* Virtual Radiologic, http://www.virtualrad.net/index.shtml

Indian[27] model. With the nighthawk model, a group of U.S.-trained physicians established a business entity within the United States to provide telemedical services for a number of U.S. hospitals.[28] In particular, nighthawk telemedical providers contract to provide a hospital with coverage during the third shift (11:00 P.M.–7:00 A.M.).[29] On this shift it is hard to find qualified domestic providers.[30] The nighthawk company deploys its physician staff on a rotating basis to Sydney, Australia or Barcelona, Spain.[31] By moving its physician staff to these remote cities, nighthawk telemedicine providers can provide consultative services from awake physicians during the day in Sydney or Barcelona to hospitals in the United States on the third shift.[32] The city chosen turns on the need for the city to be several time zones ahead or behind the United States, as well as climate and living conditions.[33]

The Indian operational model of telemedicine is also designed to provide radiologic consultative services to U.S. hospitals on the third shift. In contrast to the nighthawk model, Indian telemedicine providers are incorporated in, and hire its physician staff from, India.[34] These differences, which to the non-legal world are subtle, have a significant impact on the potential for provider liability due to jurisdictional concerns. Nighthawk telemedical providers, because they are incorporated in the United States, are clearly subject to jurisdiction in the United States, whereas Indian telemedicine providers appear unlikely to be subjected to the jurisdiction of a U.S. court.[35] This ap-

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(last visited Mar. 13, 2006). However, the composite description provided in this article does not accurately portray the actual operation of any particular company.

[27] This brief description is based on viewing several telemedical web pages. *See, e.g.*, K. Vijaya, *Teleradiology Solutions: Taking Expertise to Hospitals in US*, EXPRESS HEALTHCARE MGMT., Feb. 16-29, 2004, http://www.Expresshealthcare mgmt.com/20040229/innews07.shtml; *and Mysore Hospital Launches Telemedicine*, HINDU, Mar. 25, 2005, http://www.hindu.com/2005/03/25/stories/2005032509060300 .htm. However, the composite description provided in this article does not accurately portray the actual operation of any particular company.

[28] Nighthawk Radiology Servs., *supra* note 26.

[29] *See id.*

[30] *See id.*

[31] *Id.*

[32] *Id.*

[33] *See id.*

[34] The term "Indian model" is a descriptive term for a telemedical operation that is in widespread use in India and distinguishable from the nighthawk model. Nothing limits the use of this operational model to the country of India. Conceptually this model could be used in other countries including Australia or Spain. In fact, the operational model of any telemedical provider should not be assumed, but rather investigated prior to entering into any contract for services or initiating litigation.

[35] *See infra* Part II.B.4. Note the focus of this section of the article is narrow and the related topic of enforcement of a foreign judgment is beyond the scope of this

parent absence of liability, in turn, gives the Indian model a competitive advantage in the marketplace over and above the fact that Indian telemedicine providers can purchase physician services cheaper than the nighthawk providers. More specifically, because many Indian telemedical providers perceive themselves as beyond U.S. jurisdiction and therefore are faced with little exposure to liability, Indian telemedicine providers can avoid the cost of insurance.[36] The perception that Indian telemedical providers have minimal exposure to medical liability has already encouraged Indian telemedical providers to take risks[37] that the nighthawk providers could never take.

B. Upside: Controlling the Cost of Health Care

At present, most of the outsourcing of telemedical services in this country is done to provide medical coverage on the third shift when it is hard to find U.S. physicians who are awake. Yet because telemedical services purchased under the Indian model allow purchasers in the United States to tap into a low-wage labor pool, U.S. health care purchasers could potentially lower their expenses by purchasing more medical services from Indian vendors.[38] Independent of the potential for cost-cutting competition of Indian model vendors, increased use of telemedicine could potentially stabilize the cost of health care because of improvements in access to care, creation of economies-of-scale,

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article.

[36] Based on provider wages, the India model is more cost efficient when compared to the nighthawk model. Nighthawk physicians generally receive wages comparable to what they would receive in the United States, while physicians working under the Indian model receive about 10 percent of what their nighthawk counterparts receive for the same work. *See generally* McLean, *supra* note 1, at 212-15; *and* Andrew Pollack, *Who's Reading Your X-Ray?*, N.Y. TIMES, Nov. 16, 2003, § 3, at 1 (discussing the wages of Indian radiologists).

[37] Such risks include hiring unlicensed physicians. Rob Stein, *Hospital Services Performed Overseas*, WASH. POST, Apr. 25, 2005, at A01 (discussing unlicensed professionals reading x-rays).

[38] Telemedicine is an example of a "disruptive innovation," i.e. an innovation that allows a service to be provided cheaper and in a more convenient fashion than traditional medicine because it eliminates the need to have a physician directly involved providing the service. *See* Clayton M. Christensen et al., *Will Disruptive Innovations Cure Health Care?*, HARV. BUS. REV., Sept.-Oct. 2000, at 102, 104 (defining disruptive innovations). The history of technology teaches that when a disruptive innovation is first introduced to a market it meets resistance from those whom have a vested interest in the traditional technology. *Id.* at 103. However, over time the efficiencies associated with the disruptive technology ultimately displace the older and more established technologies. *Id.* at 104. *See also* Bruce Lytle & Michael Mack, *The Future of Cardiac Surgery: The Times, They Are a Changin'*, 79 ANNALS THORACIC SURGERY 1470, 1470 (2005) (the rules for disruptive technology apply to medicine).

reduction of medical errors, and improved competition amongst providers. If such cost savings can actually be demonstrated, it is likely that more telemedical services will be utilized on the first- and second-shifts—not so much because providers cannot be found, but rather because it will be more cost-effective.

1. Access to Care

Thus far, virtually all studies concerning telemedical operations have presumed that telemedicine improves access to care.[39] This presumption is important because of the Iron Triangle of health care, which refers to the concept that excellence in health care is not determined by access to care, quality, or cost individually.[40] Rather, excellence in health care is a function of all three variables.[41] Like any triangle, if one angle is changed, so must the other two: health care's Iron Triangle is no different. If access to care improves, in general, the cost of health care decreases. Because of the triangular relationship the reduction of health care costs does not fall linearly with improvements in access to care.

2. Economies-of-Scale

Telemedicine will also help to control health care costs by establishing economies-of-scale. An idea that originated in the Industrial Age, the concept of economies-of-scale refers to "the idea that profit margins can be improved by acquiring certain efficiencies associated with mass production of a good or service."[42] For example, consider the efficiencies that could be achieved in the field of radiology, when telemedicine becomes more common place, and radiology services are

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[39] Kirsten Rabe Smolensky, *Telemedicine Reimbursement: Raising the Iron Triangle to a New Plateau*, 13 HEALTH MATRIX 371, 398 (2003). That telemedicine axiomatically improves access to care is indirectly corroborated by the fact that many of the less developed countries are already willing to invest in telemedical systems despite a scarcity of health care dollars. MEDLINE Abstracts: Development of Telemedicine in Foreign Countries, http://www.medscape.com/viewarticle/449090 (last visited Jan. 5, 2006) (a collection of ten abstracts reporting the result of telemedicine pilot projects that are being set up in third world countries). *See also* John D. Blum, *The Role of Law in Global E-Health: A Tool for Development and Equity in a Digitally Divided World*, 46 ST. LOUIS U. L.J. 85 (2002) (discussing telemedicine in less developed countries).

[40] Richard P. Wenzel & James E. Rohrer, *The Iron Triangle of Health Care Reform*, 2 CLINICAL PERFORMANCE & QUALITY HEALTH CARE 7, 8 (1994).

[41] *Id.*; McLean, *supra* note 1, at 255.

[42] Thomas R. McLean, *Cybersurgery: Innovation or a Means to Close Community Hospitals and Displace Physicians?*, 20 J. MARSHALL J. COMPUTER & INFO. L. 495, 513 (2002) (defining economies of scale).

outsourced on the first and second shifts in addition to the present practice of only outsourcing radiology services on the third shift. Today, it is not unusual for a radiologist, or a group of radiologists, to interpret all of a hospital's radiographs under an exclusive contract. For most radiologists, this task does not take the entire day. However, because of either a restrictive covenant in the radiologist's exclusive contract with the hospital or the geographic distance to another hospital, radiologists often find that they do not practice their profession for an entire eight-hour day. Not surprisingly, these contractual and geographic limitations placed on the practice of radiologists contributed to the impression that there is a shortage, especially in rural areas, of these physicians.[43]

But in a telemedical world, it will be possible to concentrate radiologic expertise in centers-of-excellence that will receive x-ray studies from multiple hospitals. In fact it is not hard to imagine a telemedical center where radiologists work around the clock, in full eight-hour shifts, twenty-four/seven to perform all of the x-ray interpretations for images generated in a five-state area.[44] Additionally, nothing prevents such a teleradiology center from competing to provide service on the third shift in hospitals in countries eight time zones ahead or behind. That is, a teleradiology center of excellence would have the manpower to compete with a radiologist in Spain and Australia, just as physicians in these countries are currently competing with U.S. radiologists. Moreover, when clinical material is concentrated into a single center, the economies-of-scale will cause the net unit-cost for radiographic interpretation to fall below the costs currently generated by radiologists interpreting films under exclusive contracts in community hospitals.

3. Improving Patient Safety

Teleradiology centers-of-excellence would not only be economically efficient, but they would also provide intangible benefits in terms of patient safety.[45] Radiologists, like any physicians, make mis-

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[43] Chris Wolski, *Staffing Up*, DECISIONS IN IMAGING ECON., June 2004, *available at* www.imagingeconomics.com/library/200406-06.asp (discussing shortages of radiologists in rural areas).

[44] Marianne Kolbasuk McGee, *U.S. Hospitals Use Technology for Follow-the-Sun Care, American Radiologists Relocate to Australia to Work the Night Shift in an Iowa ER*, INFO. WK., Nov. 3, 2004, *available at* http://informationweek.com/story/showArticle.jhtlm?articleID=51202584 (discussing how teleradiologists work full eight-hour shifts).

[45] INST. OF MED., PATIENT SAFETY: ACHIEVING A NEW STANDARD FOR CARE 8 (Philip Aspden et al. eds., 2004) (discussing the non-economic benefits of telemedi-

takes. But the error rate for radiologists, in many cases, is excessive by anyone's yard stick. For example, the misperception rate for lung cancer on an initial chest x-ray in the medical literature runs 25-90 percent.[46] The government is well aware that by concentrating a lot of clinical work into a few centers-of-excellence there is a reasonable expectation that the error rate per interpretation will fall.[47] Minimizing the number of errors that occur by using centers-of-excellence, in turn, is beneficial not only because patient harm is avoided, but also because minimization of medical errors eliminates the need to pay for remedial medical care.[48]

4. Stimulation of Competition

Perhaps the most important method by which telemedicine will impact health care costs is by stimulating competition. Centers-of-excellence that operate twenty-four hours per day, regardless of whether they are located in the United States or abroad, will have a competitive advantage because consultative assistance and service is always available.[49] Having telemedical expertise readily available will mean that non-urban hospitals will not have to enter into lucrative and exclusive contracts with radiologists that in essence grant a provider a market monopoly. This observation is corroborated by a recent comprehensive analysis of the health care marketplace wherein the U.S. government favorably commented on the ability of telemedicine to break down geographic barriers and stimulate competition.[50] While it is true that the degree to which telemedicine will actually impact health care costs remains speculative,[51] the limitations associated with

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[46] Thomas R. McLean, *Why Do Physicians Who Treat Lung Cancer Get Sued?*, 126 CHEST 1672, 1676 (2004) (discussing the misperception rate for lung cancer on an initial chest x-ray).

[47] McLean, *supra* note 14, at 334-35 (asserting CMS's model of information sharing increases the effectiveness and quality of government provided health care).

[48] *See generally* INST. OF MED., TO ERR IS HUMAN: BUILDING A SAFER HEALTH SYSTEM (Linda T. Kohn et al. eds., 2000). *Cf.* McLean, *supra* note 42, at 513-14 (at some point a maximum benefit is reached with economies of scale, after which the cost per unit increases as does the error rate).

[49] *See generally* John Heilemann, *In Through the Outsourcing Door*, BUS. 2.0, Nov. 1, 2004, http://money.cnn.com/magazines/business2/business2_archive/2004/11/01/8189367/index.htm.

[50] FED. TRADE COMM'N & DEP'T OF JUSTICE, IMPROVING HEALTH CARE: A DOSE OF COMPETITION 23 (2004), *available at* http://www.ftc.gov/reports/healthcare/040723healthcarept.pdf (contemplating the use of telemedicine as method to increase competition among providers).

[51] Speculation remains because of the absence of large-scale telemedicine models to study. Few large-scale telemedicine operations exist due to regulatory

telemedical pecuniary data "is not that studies have strong evidence against efficacy, but rather that their methodologies preclude definitive statements."[52]

Not only will telemedicine stimulate competition in the domestic market, telemedicine will also stimulate global competition for health care services. In fact, some centers-of-excellence are already eyeing foreign medical markets as lucrative sources of revenue. For example, Dr. Eric Tangalos from the Mayo Clinic has opined that if the United States were to export its telemedical expertise, the United States could earn enough "money to fund our domestic health care system."[53] Even if Professor Tangalos' estimate is 50 percent off, the amount of money that can be earned in the global telemedicine market is prodigious. Accordingly, because of the substantial potential for earnings in global telemedicine,[54] it is to be expected that this market will increasingly attract lobbyists from corporate America who will push Congress for more favorable trade laws to protect the large domestic telemedical market from low-wage providers from abroad, while at the same time these lobbyists will push for regulations that assist telemedicine centers-of-excellence to expand abroad.

C. Downside: Unintended Consequences

1. Liability

Telemedicine, like any new technology, will not be a panacea for all that ails the U.S. health care marketplace. Just as the invention of the steam engine improved the quality of life while at the same time introducing previously unheard of injuries to society, so too will telemedicine likely improve the quality of medical care while at the same time creating unheard of medical injuries. From its inception, when telemedicine was largely limited to video teleconferencing between physicians, the Institute of Medicine (IOM) has recognized that the

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uncertainty and trade barriers. McLean, *supra* note 1, at 258. These subjects will be elaborated upon *infra* Part II.

[52] AGENCY FOR HEALTHCARE RESEARCH & QUALITY, TELEMEDICINE FOR THE MEDICARE POPULATION (2001), http://www.ahrq.gov/clinic/epcsums/telemedsum.htm.

[53] McLean, *supra* note 42, at 514 (quoting *Telemedicine: An Information Highway to Save Lives: Hearing Before the Subcomm. on Investigations and Oversight of the H. Comm. on Science, Space, and Technology*, 103 Cong., 2d Sess. 2, at 73 (1994) (written testimony of Dr. Eric G. Tangalos, M.D., Associate Professor of Medicine, Mayo Clinic)).

[54] *See* WHO INDIA REPORT, *supra* note 2, at 63, 65; Merrell, *supra* note 5, at 9-13; *and AOL to Start VOIP Service, supra* note 5, at C3.

uniqueness of telemedical relationships would challenge the traditional medical malpractice laws to redress novel telemedically mediated injuries.[55] Recent experience with electronic medical records confirms that software-assisted medical practice introduces latent errors into clinical practice.[56] The question that now arises: How should society redress telemedical mediated injuries? Such concerns will only increase with time as utilization of remote robotic surgery and other advanced telemedical technologies become more common place.[57] In addition, the calculus of telemedicine malpractice will be complicated by issues of international jurisdiction.[58] In fact, it is the complexity of calculating exposure to liability in the telemedical market, and not the capital requirements, that chills many investors contemplating entering the telemedical marketplace.

2. Impact of Disruptive Technology

Still, even if medical liability issues could be magically waved away, telemedicine would still disrupt the practice of medicine. Telemedicine, along with genetic engineering and regenerative research (i.e., stem cell research), threaten to undercut the central role of hospitals in our health care delivery system.[59] In particular, telemedicine

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[55] *See* INST. OF MED., TELEMEDICINE: A GUIDE TO ASSESSING TELECOMMUNICATIONS IN HEALTH CARE 96-100 (Marilyn J. Field ed., 1996).

[56] Ross Koppel et al., *Role of Computerized Physician Order Entry Systems in Facilitating Medication Errors*, 293 JAMA 1197, 1197-1203 (2005) (providing that computerized ordering of medication facilitated certain medication errors); Robert L. Wears & Marc Berg, *Computer Technology and Clinical Work: Still Waiting for Godot*, 293 JAMA 1261, 1261-63 (2005) (problems with medical software are not due to bugs, but rather due to poorly designed software with linear decisions being applied to complex decision-making scenarios); Amit X. Garg et al., *Effects of Computerized Clinical Decision Support Systems on Practitioner Performance and Patient Outcomes: A Systematic Review*, 293 JAMA 1223, 1223, 1236 (2005) (computer driven decision-making improves guideline compliance but not necessarily patient outcome). *See also* Jonathan Jacky, *Safety-Critical Computing: Hazards, Practices, Standards, and Regulation, in* COMPUTERIZATION AND CONTROVERSY: VALUE CONFLICTS AND SOCIAL CHOICES 767 (Rob Kling ed., Academic Press 2d ed. 1996) (1991) (discussing how a software glitch in Therac-25 resulted in several patients receiving excessive doses of radiation).

[57] *See generally* Thomas R. McLean, *Cybersurgery—An Argument for Enterprise Liability*, 23 J. LEGAL MED. 167 (2002) (discussing concerns connected with remote robotic surgery and other advanced telemedical technologies).

[58] McLean, *supra* note 1, at 247-48; Nathaniel H. Hwang, Comment, *You've Got Mail: The Concerns of Electronically Outsourcing Radiological Services Overseas*, 25 J. LEGAL MED. 469 (2004) (analyzing the outsourcing of radiology overseas).

[59] Jeff Goldsmith, *Technology and the Boundaries of the Hospital: Three Emerging Technologies*, 23 HEALTH AFF. 149, 155. Other factors, such as disease management guidelines, are also undermining the central role of the hospital in the

centers-of-excellence, which will operate with previously unheard of efficiencies, seem ideally designed to eliminate a lot of medical care that is currently provided by community hospitals. Worse, this assault on community hospitals will not be limited to forays by domestic providers, as telemedical centers-of-excellence can be located anywhere in the world. The reality is that foreign telemedical centers-of-excellence that employ a low-wage labor pool of physicians and are perceived to be beyond U.S. jurisdiction will provide unprecedented price competition to community hospitals. In short, for many providers in this country, both hospitals and physicians alike, it is this threat of foreign competition that has raised a rather interesting question: Just how should America protect its domestic health care market from foreign invasion?

II. REGULATIONS AS TRADE BARRIERS

A. Introduction

Viewed broadly, markets can be protected from foreign competition by a number of methods that limit access to the market, including excessive capital requirements, sustained disruption of transportation or communication networks, or the implementation of regulations that raise transaction costs to prohibitive levels.[60] Because telemedicine has minimal capital requirements and sustained disruption of Internet or intercontinental transportation seems unlikely, trade barriers are the primary method used to protect the U.S. telemedicine market.[61] More formally, trade barriers are

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U.S. health care system. Press Release, Second National Reports on Quality and Disparities Find Improvements in Health Care Quality, Although Disparities Remain, (Feb. 22, 2005), *available at* www.ahrq.gov/news/press/pr2005/nhqdr04pr.htm.

[60] Other economists offer slightly different analyses to health care market access. *See* Rupa Chanda, *Trade in Health Services* 26, (Comm'n on Macroeconomics & Health, Working Paper No. WG 4:5, June 2001) ("[t]here are three broad categories of barriers to trade in health services. . . . : [1] restrictions on entry and terms of practice by foreign . . . providers; [2] restrictions on foreign direct investment . . . ; and [3] domestic infrastructural, regulatory, and capacity constraints"); Matthew S. Yeo, International Trade in eHealth Services: Obstacles and Opportunities, University of Michigan/WHO Symposium on Telemedicine, *available at* http://www.med.umich.edu/ telemedicine/Symposium/yeo.PPT (last visited Feb. 16, 2006) (finding the barriers in telemedicine to be: (1) cultural (local traditions); (2) socio-political (public v. private); (3) ethical (doctor-patient relationship); (4) technologic; and (5) legal and regulatory which is the greatest barrier). A detailed comparison of the various economic schemes to analyze barriers to market entry is beyond the scope of this article.

[61] George Wiley, *Day for Night: The Development of Long-Distance Read-*

"regulations and measures imposed by [governmental agencies] that *unduly* impede trade in goods or services, in export or import."[62] Basically a trade barrier is any regulation that unreasonably increases the costs of a transaction to protect a market,[63] and until the twentieth century, trade barriers were the fundamental method by which the United States protected its nascent industries.[64]

However, before delving into a detailed discussion of trade barriers, a limiting comment on the interactions of regulations and transaction costs is in order. Although virtually all regulations increase the costs associated with a transaction, not all regulations are designed to limit market access by unduly increasing the cost of transactions. In general, non-trade barrier regulations that increase transaction costs fall into three broad categories: reasonable market restraints, protection of so-called natural monopolies, and disclosure regulations.

Regulations of the oil market are perhaps the best example of reasonable market restraint regulations as they serve to protect the oil market from itself. Because oil is a limited commodity, absent drilling, pumping, and shipping regulations, once an oil reserve is found, the oil would be pumped out as fast as possible, the market would be flooded, and the price of oil would fall.[65] Accordingly, regulations concerning oil production help to stabilize the oil market even though such regulations do, to a degree, increase the costs of bringing oil to market. Natural monopolies, like utilities, are generally industries that operate most cost-effectively only in large-scale markets. If natural monopolies are deregulated so that small companies can afford to get into the market, the resulting loss of efficiencies by the natural mo-

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ing, IMAGING ECON., Nov. 2002, *available at* http://www.imagingeconomics.com/library/200211-03.asp (state licensure has protected the teleradiology market); George Wiley, *Warning: Teleradioactive?*, IMAGING ECON., Nov.-Dec. 2000, *available at* http://www.imagingeconomics.com/library/200011-02.asp (describing the current and future market in teleradiology).

[62] Ministry of Trade & Indus., *supra* note 9 (emphasis added). More generally, a trade barrier is any device used by a government to impede the establishment of a new industry. New York v. United States, 331 U.S. 284, 308 (1947).

[63] A detailed discussion of the impact of transaction costs on the market is beyond the scope of this article. *See generally* R. H. COASE, THE FIRM, THE MARKET, AND THE LAW (1988) (discussing the origins and relationships between economic markets and society, and the legally defined formations which eventually arise).

[64] Rebecca Edwards, *Protective Tariffs*, http://projects.vassar.edu/1896/tariff.html (last visited Feb. 15, 2006) (providing a brief history of protective tariffs in the United States in 1896).

[65] DANIEL YERGIN, THE PRIZE: THE EPIC QUEST FOR OIL, MONEY, AND POWER 32-33, 52 (1991) (providing a history of the oil market while exploring the intricacies of its economic impact).

nopoly often causes prices to rise.[66] Lastly, the impact of disclosure regulations on transactions is perhaps best illustrated by certain stock market regulations. Compliance with stock market disclosure requirements clearly makes stock transactions more expensive, but few would argue that such information is not important to the investing public.[67]

B. Levels of Market Regulation

1. Federal

If we now consider the telemedicine market, the question arises: Which regulations are needed for market stabilization and which regulations are designed to protect the market? At the federal level there are several types of medical regulations that potentially may be used to protect the domestic telemedical market including payment, visa status, and transmission of medical data.[68] Medicare funds may not be used to reimburse foreign providers for medical services.[69] Yet, by regulating who can be paid for medical services, the federal government has potentially erected a trade barrier to telemedicine providers using the Indian model. Limiting the distribution of Medicare payments to only U.S. providers acts as a significant disincentive for non-nighthawk foreign telemedicine providers because it limits the effective size of the U.S. health care market open to the foreign provider.

But even if the federal government would reimburse foreign telemedical providers, these providers may still not be able to compete for patients because of their visa status. An interesting, yet unsettled question, is whether an offshore physician who telemedically examines an

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[66] *See generally* BETHANY MCLEAN & PETER ELKIND, THE SMARTEST GUYS IN THE ROOM: THE AMAZING RISE AND SCANDALOUS FALL OF ENRON (2004) (providing Enron as an example of natural monopolies and how costs rise after their dissolution).

[67] *See generally* FRANK PARTNOY, INFECTIOUS GREED: HOW DECEIT AND RISK CORRUPTED THE FINANCIAL MARKETS (2003) (describing emergent investment techniques and their shortfalls). *Cf.* JOSEPH E. STIGLITZ, THE ROARING NINETIES: A NEW HISTORY OF THE WORLD'S MOST PROSPEROUS DECADE (2003) (asymmetric knowledge of markets and market regulations means that some individuals will profit handsomely).

[68] While the U.S. laws and regulations concerning intellectual property impacts telemedicine and could be used as a trade barrier, such a discussion is beyond the scope of this article. Readers interested in this subject are encouraged to see Blum, *supra* note 39 (discussing the impact of domestic intellectual property and TRIPS on the telemedicine marketplace).

[69] 42 U.S.C. § 1395y(a)(4) (2000) (stating the exemptions of Medicare payment and coverage for services outside the United States).

American patient through the vastness of cyberspace needs a visa to enter this country.[70] A reasonable argument can be advanced for requiring a foreign telemedicine physician to hold an appropriate visa before examining a U.S. patient, just as any foreign physician, who is physically present in the United States, would be required to obtain a visa prior to examining a patient in this country.[71] If such a visa requirement were imposed on telemedical providers, nighthawk providers would have a competitive advantage in the marketplace because such providers would not need to obtain a visa. On the other hand, under GATS, while a country is free to regulate the entry and temporary lengths of stay of foreign individuals, a country may not enact regulations that would nullify a prior trade-in-services commitment.[72] Thus, if the United States were to impose visa requirements on telemedical providers using the Indian model, the United States may have to face trade sanctions under GATS. Consequently, given the imponderables that need to be weighed, it may be some time before a firm answer exists as to whether a foreign telemedicine provider requires a visa.

The final federal law or regulation(s) that could potentially act as a trade barrier to protect the U.S. domestic telemedicine market is the myriad of regulations that flow from the Health Insurance Portability and Accountability Act of 1996 (HIPAA).[73] HIPAA covers stored or transmitted protected patient information (PPI)[74]. Thus, HIPAA cov-

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[70] A detailed discussion of the need for visas in medicine is beyond the scope of this article. *See generally* Amy Hagopian et al., *Health Departments' Use of International Medical Graduates in Physician Shortage Areas*, 22 HEALTH AFF. 241, 241 (2003); Myrle Croasdale, *Visa Complications Snare Physicians; Hospitals Scramble*, AM. MED. NEWS, Sept. 15, 2003, at 1 (recounting the stories of a foreign-born physician's difficulty when reentering the United States).

[71] Interview with Amy J. Sokol, Vice-President and General Counsel, Carondelet Health (Oct. 20, 2004).

[72] Hamid Mamdouh, Director, Trade in Services Division, World Trade Organization, Movement of Natural Persons Under the GATS, Presentation to WTO Seminar on Trade and Migration (Oct. 4, 2004), *available at* http://www.iom.int/DOCUMENTS/OFFICIALTXT/EN/TMS200410_Hamid_Mamdouh.ppt#5. Due to the complexity of this subject matter, further discussion of the movement of natural persons under GATS is beyond the scope of this article. *See generally* NISHITH DESAI ASSOCS., MOVEMENT OF NATURAL PERSONS UNDER THE GATS IN THE SOFTWARE SERVICES SECTOR, *available at* http://www.wto.org/english/tratop_e/serv_e/symp_apr_02_parikh_e.doc (last visited Feb. 15, 2006) (providing a more detailed discussion of the GATS and immigration issues).

[73] Health Insurance Portability and Accountability Act of 1996, Pub. L. No. 104-191, 110 Stat. 1936 (codified as amended in scattered sections of 18, 26, 29, 42 and 45 U.S.C.). A detailed discussion of this subject, which is ubiquitous in current health care law review articles, is beyond the scope of this article.

[74] Health Insurance Portability and Accountability Act of 1996 §§ 1171,

ers telemedical transmitted patient data.[75] Not only does failure to comply with HIPAA's regulations expose a foreign provider to substantial civil and criminal penalties,[76] but compliance with HIPAA's regulations is also expensive.[77] Not surprisingly, because of the expense associated with HIPAA compliance some commentators have viewed HIPAA's regulation as a form of a federal trade barrier.[78]

On the other hand, some overseas providers look at HIPAA as a marketing opportunity. For example, some overseas providers view "HIPAA compliance" as an advertisement lure. For example, GeBBS Healthcare Solutions, an international outsourcing company, has a web advertisement that suggests the company is compliant with HIPAA.[79] But what HIPAA compliance means in this context is questionable. Under HIPAA, companies like GeBBS Healthcare Solutions would be classified as a business partner.[80] Consequently, the only way a company like GeBBS would be exposed to HIPAA liability is if the company entered into a covered entity agreement.[81] Absent the latter, overseas companies have little incentive to truly comply with HIPAA. In short, for anyone contemplating the purchase of telemedical services from an overseas provider, it would be prudent to diligently consider exposure to HIPPA liability.

1173.

[75] *See* Health Insurance Portability and Accountability Act of 1996 §§ 1171, 1173.

[76] HIPAA non-compliance has already caused embarrassment for the University of California-San Francisco and other institutions. *See* Tyler Chin, *Doctors also Ship Work Overseas (But They Don't always Know It): Offshore Outsourcing Can Save Physicians Money, But Can also Present Potential HIPAA Problems*, AM. MED. NEWS, Nov. 10, 2003, at 20, *available at* http://www.ama-assn.org/amednews/2003/11/10/bisb1110.htm; *and* Tyler Chin, *Calif. may Ban Foreign Outsourcing of Patient Files, Five Other States Are Considering Restrictions on Handling Private Data by Offshore Contractors*, AM. MED. NEWS, Mar. 15, 2004, at 16.

[77] *See* Amy J. Sokol, *HIPAA after April 14, 2003—Privacy, Security and Complaints*, 12 LEGAL MED. PERSP. 35 35-36 (2003) (discussing how the complexity of HIPAA's security rule must be individually customized for a particular provider's situation); *and* Vox[2] Healthcare: eHealthcare-Rural Telemedicine: Case Study: Community Healthnet, http://www.fcc.gov/cgb/rural/presentations/Vox2communityhealthnet.pdf (last visited Jan. 28, 2006).

[78] Yeo, *supra* note 60.

[79] GeBBS Healthcare Solutions, http://www.gebbs.com/healthcareBPOservices.htm (last visited Jan. 29, 2006).

[80] For a more detailed discussion see Marie C. Pollio, *The Inadequacy of HIPAA's Privacy Rule: The Plain Language Notice of Privacy Practices and Patient Understanding*, 60 N.Y.U. ANN. SURV. AM. L. 579 (2004).

[81] *See id.* at 590. The impact and validity of a patient's waiver of HIPAA protection is beyond the scope of this article.

While this survey of federal regulations concerning payment, immigration, and electronic medical data transmission has been brief, none of these regulations appear *unduly* burdensome when it comes to international trade-in-telemedical-services. Payment regulations serve to protect the Treasury, visa regulations serve to protect the sovereign boarders of the nation, and HIPAA promotes the transference of electronic medical data by imposing comprehensive and unified standards on all health care providers. In fact, unified regulatory schemes have the potential to reduce transaction costs by the elimination of regulation uncertainty.[82] Taking a long view, because of the significant beneficial effects flowing from federal payment, immigration, and electronic medical data transmission laws and regulations, these laws and regulations do not appear to unduly burden medical transactions. Rather these laws and regulations, on balance, appear designed to stabilize health care transactions. Accordingly, at the federal level today, the laws and regulations that impact the practice of telemedicine do not appear to act as trade barriers.

2. State

However, in contrast to the federal regulations, state medical licensure acts have become *the* mechanism by which the domestic U.S. telemedicine markets are protected.[83] And in a close second for telemedical market protection are state laws that mandate that providers are to purchase medical malpractice coverage as a condition of licensure. Although the evidence supporting the conclusion that mandated medical malpractice coverage regulations act as telemedical trade barriers is circumspect, there is clearly the potential for mandated insurance coverage to act as trade barrier.

a) Medical Licensure Acts

Since colonial times, medicine has been regulated primarily at the state level.[84] This traditional view, which was recently reaffirmed by

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[82] Although HIPAA compliance comes only after substantial initial investment, over the long run HIPAA compliance is expected to reduce transaction costs. MARILYN HAILPERIN, BEYOND COMPLIANCE: HIPAA'S EDI STANDARDS SUPPORT STRATEGIC BUSINESS OBJECTIVES, http://www.ctg.be/pdf/beyond%20compliance.pdf (last visited Jan. 28, 2006).

[83] Concerns over state licensure laws acting as a trade barrier to professional practice are not limited to medicine. *See generally* Stephen M. Worth, *The Transnational Practice of Law: Staggering Growth in Spite of Economic and Regulatory Barriers to Entry*, 7 GONZ. J. INT'L L. (2003-04).

[84] Edward P. Richards, *The Police Power and the Regulation of Medical Practice: A Historical Review and Guide for Medical Licensing Board Regulation of*

the Supreme Court,[85] has allowed the states to use their medical licensure acts to regulate the "quality of medical care providers within their boundaries according to their fiscal resources and the needs of their populace."[86] Absent a medical license, a physician cannot legally practice medicine within a state's jurisdiction.[87] Yet, these same laws, which are intended to ensure that providers meet some minimal standards, also serve to protect a state's provider-labor pool by erecting protective trade barriers that, in effect, grant providers with a monopoly for rendering health care services in a state.[88]

Telemedicine has brought the discussion of the purpose of state medical licensure acts to a boil. Given that the technical and capital requirements to enter the telemedical market are minimal, absent state licensure, there is virtually nothing to prevent remote providers from slipping across a state or national border to provide medical care. On the other hand, obtaining and maintaining a state medical license can be costly both in terms of time and money.[89] The substantial costs of a obtaining a medical license escalate quickly as a physician seeks licensure in multiple states. In addition, once multiple state medical licenses are obtained there are often the added burdens of: (1) obtaining mandated insurance coverage,[90] (2) maintaining an in-state office

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Physicians in ERISA-Qualified Managed Care Organizations, 8 ANNALS HEALTH L. 201, 202 (1999) (discussing state regulation of managed care organizations).

[85] Pegram v. Herdrich, 530 U.S. 211, 237 (2000).

[86] Thomas R. McLean, *Crossing the Quality Chasm: Autonomous Physician Extenders Will Necessitate a Shift to Enterprise Liability Coverage for Health Care Delivery*, 12 HEALTH MATRIX 239, 252 (2002).

[87] For simplicity, this article only discusses the licensure of physicians. Hospitals have their own licensure/approval requirements, e.g., Certificate of Need, but discussion of hospital licensure is beyond the scope of this article.

[88] McLean, *supra* note 86, at 250-51.

[89] While requirements vary from state to state, obtaining a medical license is at least as difficult as obtaining a law license; and like a law license, many states impose continuing education requirements on license holders. Moreover, the penalties for practicing medicine without a license can be substantial. *See, e.g.*, TEX. OCC. CODE ANN. §151.056 (Vernon 1999). Practicing medicine without a license in Texas is a class A misdemeanor, which for the first offense is punishable by a fine of up $4,000 and/or up to one year in jail. TEX. PENAL CODE ANN. §12.21 (Vernon 1999). As a general rule, a telemedical provider must have full-licensure status to provide medical services in a remote state. However, six states only require telemedical providers to have special purpose licensure. *See* ALA. CODE § 34-24-502 (2006) (Alabama); S.B. 241, 140th Gen. Assem. (Del. 2000) (Delaware, this bill was assigned to Delaware's Senate Judiciary Committee on Jan. 17, 2006); MONT. CODE ANN. § 37-3-301 (2005) (Montana); S.B. 600, 70th Leg. Assem., Reg. Sess. (Or. 1999) (Oregon); TENN. COMP. R. & REGS. 0880-2-16 (2005) (Tennessee); *and* 22 TEX. ADMIN. CODE § 163.14 (2006) (Texas).

[90] McLean, *supra* note 86, at 271-72.

to perform physical examinations,[91] and (3) accumulating continuing medical education credits. In short, unlike the minimal capital requirement to become a telemedical provider, market access is significantly limited to telemedical providers by the need to be in compliance with a state's medical licensure laws.[92]

In fact, it is precisely because of the high costs associated with licensure compliance that states have used their licensure laws as the preferred mechanism to protect their indigenous physician labor pool from foreign competition.[93] Consequently, in the current market, when a state finds a provider who uses cyberspace to avoid compliance with its licensure act, that state will aggressively prosecute the provider. For example, the state of North Dakota revoked the medical licenses of Dr. Jones, a telemedical provider, because he failed to perform a physical examination on a North Dakota patient before prescribing medications.[94] Similarly, the State of Illinois closed down an out-of-state telemedical provider's operation because the provider did not perform a physical examination.[95] Moreover, because of reciprocal discipline statutes, the revocation a medical license in one state has significant impact on a telemedical provider's livelihood. Reciprocal discipline statutes, which allow a second state to impose the same or similar discipline on a provider as an adjudicating state, can negatively impact a provider's livelihood because once a provider's license is revoked by one state, reciprocal discipline statutes ensure that it is only a matter of time before all of a provider's licenses to practice medicine are revoked.[96]

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[91] Robert J. Waters, Presentation to the Center for Telemedicine Law, Washington, DC, Anticompetitive Efforts to Restrict Telehealth Services on the Internet: Federal Trade Commission Workshop (Oct. 9, 2002) (on file with author) (observing that by enactment, regulation, or policy, twenty-seven states require a physical examination before prescribing medication).

[92] Nicolas P. Terry, *Cyber-Malpractice: Legal Exposure for Cybermedicine*, 25 AM. J.L. & MED. 327, 328 n.7 (1999) (state licensure laws act to inhibit the expansion of telemedicine).

[93] *See* Nat'l Conference of State Legislatures, Telemedicine Legislation, http://www.ncsl.org/programs/health/teleleg.htm (last visited Feb. 10, 2006) (providing a legislative summary of telemedicine-related laws); Pam Brinegar & Melissa McGinley, Telepractice and Professional Licensing: A Guide for Legislators (1998), http://www.clearhq.org/teleguide.htm.

[94] Jones v. N.D. State Bd. of Med. Examiners-Investigative Panel, 691 N.W.2d 251 (N.D. 2005) (an appropriate examination is required by North Dakota licensure law).

[95] Ann Carrns, *Illinois Orders Indiana Web Site to Stop Offering Medical Service*, WALL ST. J., Oct. 30, 2002, at D4 (discussing the Illinois Department of Professional Regulation's order against Mydoc.com).

[96] Ramirez v. Bd. of Registration in Med., 806 N.E.2d 410 (Mass. 2004)

b) Malpractice Coverage

In many states, obtaining prescribed medical malpractice coverage is a precondition to holding a valid medical license.[97] Like the field of medicine, the traditional view of insurance regulation was that it belonged to the states because the business of insurance concerns indemnity contracts and not interstate commerce.[98] This view of insurance was formalized in the McCarran-Ferguson Act, which declared that the business of insurance is regulated by the states.[99]

Thus, each state is free to set up its own insurance requirements for its health care providers.[100] Nathan Hwang has argued that such an approach to telemedical malpractice coverage is appropriate because the states are the proper party to set balancing points between the potential for patient harm and allowing providers the opportunity to outsource some of their medical services to help control costs.[101] Still, while there is little question that mandated professional insurance coverage increases the costs of providing health care,[102] as in the case of federal regulations concerning payment, visas, and electronic medical records, something more is needed for state-mandated medical malpractice coverage to raise to the level of a trade barrier. In actual practice, it is the operation of an insurance system itself that adds

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(Massachusetts court applied reciprocal punishments).

[97] *See, e.g.*, KAN. STAT. ANN. § 65-2809(c) (2005). Such statutes in essence invoke the Insurance Code.

[98] Paul v. Virginia, 75 U.S. 168, 183-84 (1869) (upholding a Virginia law regulating insurance companies). *Cf.* for a brief period in this country after *United States v. South-Eastern Underwriters Ass'n*, 322 U.S. 533 (1944), the insurance transactions were considered to be interstate commerce. *See* Susan Randall, *Insurance Regulation in the United States: Regulatory Federalism and the National Association of Insurance Commissioners*, 26 FLA. ST. U. L. REV. 625, 633 (1998-1999).

[99] 15 U.S.C. § 1011 (2000). *See also* Thomas R. McLean & Edward P. Richards, *Health Care's "Thirty Years War": The Origins and Dissolution of Managed Care*, 60 N.Y.U. ANN. SURV. AM. L. 283, 308-10 (2004-2005) (discussing recent Supreme Court cases impacting the determination of the business of health insurance); Edward P. Richards & Thomas R. McLean, *Physicians in Managed Care: A Multidimensional Analysis of New Trends in Liability and Business Risk*, 18 J. LEGAL MED. 443, 462-63 (1997) (discussing the determination of what constitutes the business of health insurance).

[100] However, because of the actions of the National Association of Insurance Commissioners "the content of insurance regulation evidences strong similarities from state to state." Randall, *supra* note 98, at 629.

[101] Hwang, *supra* note 58, at 483-84.

[102] Edward P. Richards & Thomas R. McLean, *Administrative Compensation for Medical Malpractice Injuries: Reconciling the Brave New World of Patient Safety and the Torts System*, 49 ST. LOUIS U. L.J. 73 (2004) (mandating that providers purchase medical malpractice coverage significantly increases health care transaction costs because of system inefficiencies).

something more to mandated insurance coverage and creates the potential for trade barriers.

Conceptually, a state's insurance code regulates virtually every aspect of the business of insurance within its boundaries. For example, a state's insurance code extends from methods of actuarial analysis to the size of reserves that must be held by an insurer. In the case of health insurance, other aspects of an insurance code may even specify whether physicians can be excluded from a managed care organization's provider panel[103] and the benefits a patient must receive if the insurer is to do business in the state.[104] The purpose of such comprehensive insurance regulation is, in part, consumer protection and, in part, to provide the public with assurance that insurance carriers that operate in a state are financially stable.[105] But, if compliance with the insurance code is made too burdensome, large insurance carriers may decline to enter a state's market and others may exit the state's market.[106] Conversely, if a state wishes to nurture a home insurer it can use its state insurance code to protect the carrier from out-of-state competition.[107] Consequentially, if a state wanted to use mandated telemedical malpractice coverage statutes as a trade barrier, it could make the purchase of insurance unduly burdensome by making code compliance difficult, thereby serving as a disincentive for carriers to enter the market.

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[103] Ky. Ass'n of Health Plans, Inc. v. Miller, 538 U.S. 329 (2003) (upholding a Kentucky law regulating insurance pools); Rush Prudential HMO, Inc. v. Moran, 536 U.S. 355, 359 (2002) (holding that Illinois's HMO statute covering employee welfare is not preempted by ERISA).

[104] Metro. Life Ins. Co. v. Mass., 471 U.S. 724 (1985) (upholding a Massachusetts statute against an insurer).

[105] PAUL GUPPY, WASH. POLICY CTR., WASHINGTON NEEDS AN APPOINTED INSURANCE COMMISSIONER (1999), http://www.washingtonpolicy.org/Govt Regulations/PBGuppyGRInsuranceCommissioner.html.

[106] *See* Thomas R. McLean, Stealth v. Health*: The Complexity of Tort Reform*, 12 LEGAL MED. PERSP. (2003) (discussing how St. Paul Fire and Marine exited the medical malpractice market business because the narrow profit margin associated with providing such coverage no longer made sense). However, in truth, medical malpractice carriers exit markets because of the insurance cycle and not necessarily because of regulatory requirements. *See* Thomas R. McLean, *Stealth v. Health: Revisiting Tort Reform*, 14 LEGAL MED. PERSP. (2005), *available at* http://www.aclm.org/publications/lmp/supplements/2005/julyaug2005_supplement.asp.

[107] Kansas serves as an example. After recovering from the medical malpractice crisis in the early 1980s, Kansas enacted a number of reforms. In particular, because the state medical society endorsed the formation of a mutual insurance carrier, the state enacted specific legislation to create such an insurance company. Interview with Larry Gill, Vice President, KaMMCO/MSC (Apr. 19, 2005) (citing KAN. STAT. ANN. §§ 40-12a02-40-12a09 (2004)).

Moreover, if a foreign telemedicine provider wishes to do business in multiple states, the provider would need to be in compliance with multiple insurance codes, which, not unlike multiple licensure requirements, would act as a further trade barrier.[108] To understand this concept it must be realized that while there is much overlap between state insurance codes, each state's code has its own unique definitions, coverage schemes, and procedures. Accordingly, for a foreign telemedical provider to do business in all fifty states, the provider would have to hire a phalanx of insurance experts to deal with the various nuances in state insurance law. This need for a phalanx of insurance specialists to deal with multiple state insurance regulations has, for almost two generations, been recognized as a barrier to operate a nationwide business.[109] Even before the issue of telemedical malpractice was ever contemplated, the Employee Retirement Income Security Act (ERISA) was enacted precisely because national employers lobbied to have the trade barrier associated with complying with multiple state insurance codes eliminated.[110]

3. Professional Organizations

From a definitional point of view, professional organizations cannot be trade barriers because they are not governmental regulators that unduly impede certain market transactions. However, this section is included here for completeness, as few individuals today doubt that special interest groups are often the motivating force behind the enactment of protective regulations. Herein, recently articulated policies of the American College of Radiology (ACR) and the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) are selectively reviewed: ACR because of its hard-line support of trade barriers (in the form of state licensure laws and mandated insurance) to protect the domestic telemedicine market and JACHO because of a change in its accreditation procedure concerning telemedicine provid-

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[108] Danielle F. Waterfield, *Insurers Jump on Train for Federal Insurance Regulation: Is It Really What They Want or Need?*, 9 CONN. INS. L.J. 283, 304 (2002) ("Representatives from European insurance trade associations are urging U.S. 'state lawmakers to become more active in [the] international forums that are setting the ground rules for the new century of trade.'").

[109] *See* Thomas R McLean & Edward P. Richards, *Managed Care Liability for Breach of Fiduciary Duty After* Pegram v. Herdrich*: The End of ERISA Preemption for State Law Liability for Medical Care Decision Making*, 53 FLA. L. REV. 1, 5 (2001) ("President Ford signed the Employee Retirement Income Security Act [ERISA] to facilitate contracting for national employers by eliminating the need to have to contemplate fifty different state laws.").

[110] McLean & Richards, *supra* note 99, at 315.

ers. While the positions of both of these organizations are driven, in part, by the desire to preserve their place in the health care marketplace, both organizations may be unwittingly facilitating an invasion of the U.S. health care market by foreign telemedicine providers.

a) ACR Recommendations

The ACR, which recognizes the inevitability of radiology jobs being offshored, advocates that existing laws governing medicine should be enforced.[111] More specifically, because the ACR believes remote physicians should be held to the same standards as on-site physicians, the ACR's position is that providers of telemedicine are to be fully licensed and in compliance with all of the local regulations, including mandated insurance, that are relevant to the practice of medicine.[112] In the ACR's view, the primary surveillance mechanism for hospitals is the process of credentialing physicians,[113] which is to include verification of malpractice coverage.[114]

Although the ACR's position is not unexpected, it has been recognized for some time that when a professional association, like the ACR, espouses a position for ensuring the compliance with certain minimal professional standards—even if such a position is superficially noble—such position statements often reflect the association's perceived need for market protection legislation.[115] Thus, because obtaining and maintaining multiple state medical licenses is suffi-

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[111] Gerald C. Buffo & Sultan Ahamed, *International Teleradiology: What Are the Risks?*, PHYSICIAN INSURER, Second Quarter 2005, at 13-16.

[112] Arl Van Moore et al., *Report of the ACR Task Force on International Teleradiology*, 2 J. AM. C. RADIOLOGY 121, 122-23 (2005). A discussion of the hardware performance criteria for telemedicine systems promulgated by the ACR is beyond the scope of this article. For further information, see Am. C. of Radiology, *ACR Technical Standard for Teleradiology*, TELERADIOLOGY, 2002, at 709-18, *available at* http://www.unifesp.br/dis/set/disciplina/materialdeapoio/ACRTechnicalStandardfor Teleradiology.pdf.

[113] Van Moore et al., *supra* note 112, at 123.

[114] Because various legal theories can be used to make a hospital answer for the wrongs of physicians on the hospital's staff, hospitals may want to adopt this recommendation. However, having remote physicians purchase medical malpractice coverage may provide illusory protection because the remote physicians using the Indian model are likely to be out of the reach of U.S. courts. *See supra* Part II.B.4.

[115] *See* Rupa Chanda, *Trade in Health Services* 29-30 (Indian Council for Research on Int'l Econ. Relations, Working Paper No. 70, Nov. 2001), *available at* http://www.unctadindia.org/consultationontheframeworkWTOAgreementOfJuly2004 _rupachanda02.pdf. "This distinction between a purely protectionist policy and a public interest policy often depends on how the regulations are administered, whether they are transparent in their criteria and use or whether they are used in a discretionary and discriminatory manner." *Id.* at 33.

ciently difficult to dissuade many individuals from obtaining them, it is reasonable to conclude that the ACR's position is predicated on the notion that the domestic teleradiology market needs protection from low-wage overseas providers. Such a conclusion is reinforced by the ACR's need to qualify its statement concerning compliance with state licensure laws: "[P]hysicians who provide the official, authenticated interpretation of images transmitted by teleradiology should maintain licensure appropriate to delivery of radiologic services at both the transmitting and receiving sites."[116] The ACR does not define equivalent training but it is reasonable to conclude that in the ACR's view equivalent training means full licensure plus board certification.[117] Accordingly, because board certification is virtually only achievable by attending approved residency programs, which are all located in the United States, the ACR's use of "equivalent" training could, if adopted as such, constitute a substantial trade barrier that would benefit nighthawk telemedicine providers.

The problem with protecting the domestic radiology market with trade barriers is that it is nearsighted. True, for a time full licensure and insurance coverage requirements will dissuade Indian and perhaps some nighthawk telemedical providers from operating nationwide. Yet, what will the radiologist use to protect their market if America moves to national licensure? Powerful forces in the form of the patient safety movement[118] and the liberalization of global trade policies under international treaties[119] are inextricably moving America towards national medical licensure, which will be analogous to a pilot's license.[120] Even the ACR's notion that hospital credentialing be used to

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[116] Van Moore et al., *supra* note 112, at 122 (internal reference omitted).

[117] While not all practicing physicians have attained board certification, market forces are increasingly forcing non-board certified physicians out of the workplace. *See, e.g.,* Geisinger Health Plan, Credentialing Standards, https://www.thehealthplan.com/non_members/prospectcredentialing.cfm (last visited Dec. 19, 2005) (beginning in 2003, as a condition of employment, this health plan's policy required that a physician had to be either board certified or eligible to take a board examination).

[118] *See generally* INST. OF MED., *supra* note 48.

[119] *See infra* Part III.F.

[120] As with a federal pilot's license, the holder, subject to certain restrictions of the specific license class, is free to fly anywhere in America. *See* Fed. Aviation Admin., Flight Standards Service: How Do I Become a Pilot: Frequently Asked Questions (FAQ), http://www.faa.gov/AVR/afs/pilotfaq.htm (last visited Mar. 20, 2006); Ross Oliver, How to Become an Airline Pilot, http://www.airaffair.com/Library/start-airplanes.html (last visited Mar. 20, 2006); SoYouWanna Get a Pilot's License, http://www.soyouwanna.com/site/syws/pilot/pilot.html (last visited Mar. 20, 2006). However, a detailed discussion of national pilot licensure is beyond the scope of this article.

verify licensure and proof of insurance seems overly trusting. Requiring that hospitals oversee that physicians are in compliance with state regulations is too ill-suited to stabilize and protect the health care marketplace from future foreign invasion because obtaining jurisdiction over remote providers, found after-the-fact not to be in compliance, will be difficult at best and frequently impossible.[121]

b) JCAHO

The ACR's recommendation that hospitals should use their credentialing process to verify a remote provider's licensure status is also interesting in light of JCAHO's recent amendment to its hospital policy manual that liberalizes the standards for credentialing in telemedicine. The JCAHO views telemedicine broadly, which includes any electronic communication made for the purpose of improving patient care, treatment, or services.[122] In the past, remote telemedical providers were credentialed by a hospital just as that hospital would have credentialed any other physician.[123] However, in 2005, the JCAHO amended its standards to allow for "credentialing . . . by proxy" in telemedicine.[124] Under this amendment, when a hospital credentials a telemedical provider by proxy, the hospital simply accepts an accredited hospital's credentialing folder for a provider at face value, and does not individually verify the information therein.[125] Although this amendment is intended for use in emergent situations, credentialing by proxy could potentially lower telemedical transaction costs by eliminating redundant work.[126] After all, credentialing by proxy eliminates the need for a second hospital to verify a provider's references, education, and past employment. Yet, as experience is gained with credentialing by proxy under emergent situations, if it proves safe, credentialing by proxy will likely be applied more routinely since it eliminates paper work and reduces transaction costs.[127]

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[121] Van Moore et al., *supra* note 112, at 123-24 (ACR's own attorneys acknowledge that obtaining jurisdiction over an individual in a non-criminal/non-capital case is extremely difficult). A more detailed discussion of cyberspace jurisdiction can be found *infra* Part II.B.4.

[122] JOINT COMM'N ON ACCREDITATION OF HEALTHCARE ORGS. (JCAHO), COMPREHENSIVE ACCREDITATION MANUAL FOR HOSPITALS MS-29 (2005).

[123] *Id.* at MS-30.

[124] *Id.*

[125] *Id.*

[126] For example, transaction costs would be reduced by eliminating redundant clerical work. Discussion of the liability associated with negligently credentialing by proxy is beyond the scope of this article.

[127] Credentialing by proxy has a long way to go before it becomes mainstream. For example, how does one assure that a provider's electronic credentialing

4. Why Regulatory Protection of the Telemedicine Market Will Fail

For optimal efficiency, some markets need to be regulated.[128] Similarly, some markets need to be nurtured under protective trade barriers to develop.[129] But, when regulations are used as a permanent trade barrier, economic history teaches that trade barriers have a limited life expectancy.[130] That is, trade barriers can only protect a market for so long because the competition ultimately finds a way around the barriers or a way to neutralize the barriers.[131] That trade barriers have a limited period of usefulness should be viewed with concern by the medical community if we are going to protect our nascent domestic telemedicine market by erecting trade barriers as recommended by the ACR. In a truly global economy, it is free trade, and not trade barriers, which is proven to "provide the richest benefits and highest efficiency in a self-regulating global marketplace."[132] Moreover, it is widely believed today that if a nation wants to prosper, it must shift to a global economy where trade barriers are increasingly becoming historical footnotes.[133] Additionally, there is good reason to believe that many nations will not be willing to allow the United States to protect its domestic telemedical market via trade barriers for much longer.

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folder is valid when 61 percent of complaints to the FTC about Internet transactions concern fraud? *See* Lorene Yue, *Web Fraud Dominates Consumer Complaints*, CHI. TRIB., Mar. 20, 2005, §5, at 5.

[128] *See generally* PARTNOY, *supra* note 67 (exploring stock market regulation); STIGLITZ, *supra* note 68, at 87-88 (attributing current economic problems to outdated ideologies followed in the 1990s); MCLEAN & ELKIND, *supra* note 66 (oil industry—explaining how deregulation could have affected Enron's practices); YERGIN, *supra* note 66 (oil industry regulation); *and* CHARLES F. WILKINSON, CROSSING THE NEXT MERIDIAN (1992) (land speculation).

[129] NOREENA HERTZ, THE DEBT THREAT: HOW DEBT IS DESTROYING THE DEVELOPING WORLD 105 (2004) (observing that between the Civil War and the end of World War II, no economy benefited as much from protective trade barriers as the American economy).

[130] McLean, *supra* note 42, at 522; Thomas R. McLean, *Turf Wars: What Can Modern Medicine Learn from Medieval Guilds?*, 2005 AM. HEART HOSP. J. 269, 271.

[131] With increasing technologic advancements, the time-effectiveness of trade barriers is decreasing. *See* FRIEDMAN, *supra* note 10, at 45-48.

[132] Ehrlich, *supra* note 10, at 265.

[133] *Id.* at 264-65 (explaining how global free trade, and not preferential treatment for domestic companies, is advantageous for all markets).

a) Cyberspace Jurisdictional Theory[134]

In fact, two powerful legal-socioeconomic forces are already poised to undermine state law-based trade barriers protecting telemedicine:[135] jurisdictional realities and multilateral trade agreements. Discussion of jurisdiction realities, in turn, can be further subdivided into jurisdictional theory and jurisdictional practice in cyberspace.

State licensure laws are likely to mean little to many remote telemedicine providers because of the difficultly U.S. courts will have asserting jurisdiction on remote foreign providers in their home countries. For a court in the United States to assert jurisdiction over a remote telemedical provider, that court must have personal jurisdiction over that provider to enforce its licensure and mandated insurance laws.[136] Under a traditional civil procedure analysis of jurisdiction, to have personal jurisdiction over a remote party, the court must be able to demonstrate that the defendant had engaged in purposeful, "minimum contacts" within its geographical boarders and there must be an appropriate long-arm statute such that traditional notions of fair play would not be upset by bringing a defendant into the court to answer for alleged wrongdoing.[137] The demonstration of sufficient minimal contracts and appropriate long-arm statute lies with the plaintiff.[138] Unfortunately, how this analysis applies in cyberspace is subject to some speculation. In the world of telemedicine, in particular, there does not yet appear to be a jurisdictional case on point,[139] and when telemedical jurisdiction has been discussed in the legal literature an

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[134] In the world of international trade-in-services, a service may be provided by four separate methods known as modes. *See infra* Part III.D.2. Herein, the discussion assumes that telemedicine is being provided as a Mode 1 service.

[135] *See* McLean, *supra* note 1, 263-64.

[136] *See* Jay Kesan, Learning Cyberlaw in Cyberspace: Personal Jurisdiction in Cyberspace: Brief Summary of Personal Jurisdiction Law (1999), http://www.cyberspacelaw.org/kesan/kesan1.html. However, the forum court will have jurisdiction over the local provider who took the patient's radiograph. Whether the local provider has liability independent of the remote provider, e.g., on the basis of negligent selection of the remote provider, is beyond the scope of this article.

[137] Int'l Shoe Co. v. Washington, 326 U.S. 310, 316-17 (1945). The medical world has a fundamental misunderstanding of personal jurisdiction. *See* Van Moore et al., *supra* note 112, at 123-24.

[138] Hoag v. Sweetwater Int'l,, 857 F. Supp. 1420, 1424 (D. Nev. 1994). To simplify this discussion, it is assumed during the rest of this article that a proper long-arm statute is in effect.

[139] However, it is only a matter of time before these remote telemedicine providers raise jurisdiction as a defense. One remote Indian telemedicine provider has already been named as a defendant in an unreported medical malpractice suit. *See* Stein, *supra* note 37, at A01 (a remote provider allegedly miscommunicated radiograph information to a U.S. emergency room physician).

implicit assumption is made that only state, and not international, boundaries are crossed.[140]

Perhaps the case that comes closest to addressing personal jurisdiction issues in cyberspace is *Bradley v. Mayo Foundation*.[141] In this case, the Mayo Clinic, which does not have offices in the state of Kentucky, found itself sued by Mr. Larry Bradley.[142] When Mr. Bradley's local physician determined that he needed specialized treatment, Mr. Bradley received a referral to Mayo Clinic. After visiting the Clinic, a Mayo physician-employee coordinated Mr. Bradley's outpatient drug treatment care in Kentucky, via telephone and mail correspondence, with local providers.[143] When Mr. Bradley experienced an unsatisfactory outcome from the Mayo Clinic treatment protocol, he filed suit in a Kentucky court.[144] To obtain personal jurisdiction over the Clinic, Mr. Bradley asserted that because of Mayo Clinic's physician's telephone and mail contact with providers in Kentucky, sufficient minimal contacts existed between the Mayo Clinic and Kentucky for personal jurisdiction.[145] However, after hearing the evidence, the Kentucky court disagreed and dismissed the case.[146] Not only did the court not buy Mr. Bradley's argument that the Mayo Clinic physician was practicing medicine in Kentucky,[147] but the court went on to add:

> Writing prescriptions, sending letters confirming diagnoses previously made, and telephone consultations are routine actions taken by medical practitioners regardless of where their patients are located. Such routine actions, when incidental to treatment in the physician's home state, should not subject the physician or his employer to jurisdiction in any state in which his patient happens to reside.[148]

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[140] McLean, *supra* note 1, at 247-49.

[141] No. 97-204, 1999 U.S. Dist. LEXIS 17505 (E.D. Ky.)..

[142] *Id.* at *4-5.

[143] *Id. Cf.* Some courts have concluded that a forum court does not have jurisdiction over an out of state provider if the patient travels to the remote provider's place of business. Vance v. Molina, 28 P.3d 570, 574 (Okla. 2001). However, *Bradley* is distinguishable from *Vance* because the out of state provider actively managed a patient's care after the patient visited the out of state location.

[144] *Bradley*, 1999 U.S. Dist. LEXIS 17505, at *4-8.

[145] *Id.* at *7.

[146] *Id.* at *22-23.

[147] *Id.*

[148] *Id.* at *27. More generally, in cyberspace, more than a passive webpage is required to trigger personal jurisdiction in a remote forum. Zippo Mfg. Co. v. Zippo Dot Com, Inc., 952 F. Supp. 1119, 1124 (W.D. Pa. 1997).

Most physicians reading this opinion would likely reach the opposite conclusion because physicians would see the doctors at the Mayo Clinic as practicing medicine in Kentucky, and therefore purposeful minimal contacts would exist. After all, the Clinic's physicians were supervising allied health professionals just as they frequently do in Minnesota. Thus, in the future, this case will likely be viewed as fact-specific; had Mayo Clinic advertised in Kentucky or had one of its physicians staffed a clinic in Kentucky the case might have come to a different conclusion. On the other hand, what is important about this case is that because the Kentucky court would not assert personal jurisdiction against a Minnesota provider giving orders over the telephone to allied health professionals, it is unlikely the Kentucky court would find personal jurisdiction over a foreign telemedical provider who provided care in association with local allied health professionals via video teleconferencing, especially if first contacted by the Kentucky citizen.

This case also illustrates an important point about cyberspace jurisdiction. If one attempts to apply the traditional physical world model of jurisdiction to a remote international telemedicine provider, the traditional model is placed under strain. And this strain is not limited to issues of jurisdiction. For example, in a case of alleged cyber-malpractice: in which country would the telemedicine tort have been committed, which country's laws should apply, and which country gets to decide these issues?

The source of the stain in cyberspace jurisdictional analysis can be traced to the traditional jurisdiction model being predicated on geography. Known as the "effects doctrine,"[149] jurisdiction based on geography exists "if an activity takes place within a territory, that territory has the jurisdiction to create laws to regulate the activity."[150] Unfortunately, in cyberspace, and on the Internet in particular, where geographic boundaries are nonexistent, traditional notions of jurisdiction tend to break down.[151] Moreover, not only is geography-based jurisdiction hard to apply in cyberspace, but the problem is unlikely to be resolved soon as different proposals concerning effects doctrine jurisdiction have been advanced by the United States[152] and the European Union.[153]

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[149] Catherine P. Heaven, *A Proposal for Removing Road Blocks from the Information Superhighway By Using an Integrated International Approach to Internet Jurisdiction*, 10 MINN. J. GLOBAL TRADE 373, 377-78 (2001).

[150] *Id.* at 378.

[151] *Id.* at 377.

[152] *See, e.g.*, Laura Ann Forbes, Comment, *A More Convenient Crime: Why States Must Regulate Internet-Related Criminal Activity under the Dormant Com-*

Perhaps a better solution to cyberspace jurisdiction is to abandon the notion that such jurisdiction needs to be grounded in geography. Using the Outer Space Treaty[154] as a guide post, cyberspace could be analogized to outer space, which is considered international territory. Under the Outer Space Treaty, which is an expansion of the Law of the Sea, jurisdiction is imposed based on nationality and not on geographic location.[155] Under this model of jurisdiction, the person who creates or controls the telemedical equipment attaches his or her nationality to the operation so as to create a virtual cyber island in cyberspace, "much like how flags created an island of jurisdiction for ships at the beginning of the development of the Law of the Sea."[156] Accordingly, under nationality based jurisdiction of international spaces, the home country of the person whose nationality attached to the telemedical operation would become the forum jurisdiction for policing the telemedical operation.[157]

However, if the Outer Space Treaty becomes the model for cyberspace jurisdiction it would significantly undermine the ability of states to erect trade barriers to protect their domestic telemedicine market. This is because under the Outer Space treaty, only the law of the home nation, and not the states or provinces of a nation, would attach. Accordingly, under the Outer Space Treaty jurisdiction, the laws of a state would have little import as only federal law would attach to the domestic telemedical operation.[158]

b) Cyberspace Jurisdictional Practice

Even if the law for determining jurisdiction in cyberspace were settled, there is still the practical matter of serving notice on the remote telemedical provider. Under traditional notions of fairness, defendants are entitled to receive notice from a court that is planning to assert jurisdiction over the defendant or the defendant's property. Accordingly, in the United States, statutes are in place at both the state and federal levels detailing service of process on foreign defen-

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merce Clause, 20 PACE L. REV. 189 (1999).

[153] *See, e.g.*, Globalisation and the Information Society, A4-0366/98, at 7 (Jan. 14, 1999), http://en.infosoc.gr/content/downloads/com9850en.pdf.

[154] Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, U.S.-U.K.-U.S.S.R., Jan. 27, 1967, 18 U.S.T. 2410.

[155] Heaven, *supra* note 149, at 390. This article deals primarily with criminal law jurisdiction.

[156] *Id.*

[157] *Id.*

[158] *Id.* at 395.

dants.[159] Massachusetts, for example, requires that service of process on a foreign defendant is via legal rogatory or a non-binding letter from the state court to a foreign court requesting a subject to be served.[160] But unless the matter is a capital criminal offense, a foreign court is not likely to have much of an incentive to serve process on its own citizen, especially if that citizen is a telemedical provider bringing in a substantial amount of U.S. health care dollars.[161] Under the Federal Rules of Civil Procedure, service on an individual in a foreign country must be by rogatory or in accordance with international law.[162] While international law may facilitate federal service in another country, use of international law invites recognition of other international laws, such as the GATS and NAFTA treaties. This, as we shall see in the next Part of this article, opens a whole new "can of worms" for the domestic telemedical marketplace.

But even if the issue with both the jurisdictional and service of process were suddenly resolved, there is one other practical concern with getting foreign telemedical providers to answer for the harms they cause. It is one thing to mandate that telemedical providers carry medical malpractice coverage and an entirely different thing to get a medical malpractice carrier to perform on the insurance contract because of exculpatory clauses. Potentially, such clauses could be drafted in a number of ways to protect insurers from exposure in the telemedical arena, including exclusion of coverage for non-physician-to-patient interaction and providing excessively risky consultative services.[163] Of particular interest is the use of exculpatory clauses that

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[159] The discussion that follows assumes that the named defendant does not have a registered agent in the United States, which would greatly facilitate process serving. However, even with a registered agent, a remote provider may not necessarily cooperate if that provider has either a minimal share of the telemedicine market or lives in a country that is prepared to intervene on the provider's behalf. *See supra* Part II.B.4.

[160] MASS. GEN. LAWS ANN. ch. 223A, § 6(a)(4) (West 2000). A rogatory letter, or a letter of request, is a formal letter by state court to a court in a foreign jurisdiction requesting that an individual be served. BLACK'S LAW DICTIONARY 916 (7th ed. 1999).

[161] The attorneys for the American College of Radiology have opined that in non-capital criminal cases, bringing a defendant to justice in the United States is very difficult. *See* Buffo & Ahamed, *supra* note 111, at 15; *and* Van Moore et al., *supra* note 112, at 123.

[162] FED. R. CIV. P. 4(f).

[163] Sultan Ahamed, President & Chairman, Conn. Med. Ins. Co. Malpractice Insurance Coverage and Telehealth, Speech at the 28th Annual Meeting of the Physicians Insurers Association of America (May 25-28, 2005). Not all malpractice policies cover telemedical services, and when telemedicine is covered, exculpatory clauses are the rule. *Id.* Moreover, medical malpractice policies generally do not

require a physician-defendant to participate in their defense.[164] Although these clauses are common in medical malpractice contracts, currently, they are rarely used. Still, because from time-to-time an insurer will elect to enforce this clause,[165] it seems probable that such exculpatory clauses will see more use in the era of international telemedicine.

Imagine a hypothetical situation in which a remote foreign provider is named as defendant in a medical malpractice.[166] Assuming that process is properly served, after obtaining the advice of local counsel in the provider's home country, the provider concludes that even if a U.S. court assets jurisdiction, there is little likelihood that any judgment will be enforced. Accordingly, the remote foreign provider elects to ignore the summons, and refuses to cooperate further with the judicial proceedings. After a default judgment is entered, the plaintiff attempts to collect from the telemedicine provider's medical malpractice carrier. At this point the malpractice carrier would play the exculpatory trump card.[167] Because the physician did not cooperate, the insurer is under no duty to perform under the insurance contract.

Such an analysis suggests that telemedicine providers using the Indian model, as well as their insurers, face little in the way of liabil-

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cover a physician's activities where the physician does not have a valid license. W. Governors' Ass'n, Telemedicine Action Update (1998), http://www.westgov.org/wga/publicat/combar4.htm.

[164] For example, the standard indemnity contract of one medical malpractice carrier contains the following clause: "The Insured and each of its employees shall cooperate with the Company and, upon the Company's request, assist in making settlements, in the conduct of suits and in enforcing any right of contribution or indemnity against any person or organization who may be liable to the Insured because of injury or damages with respect to which insurance is afforded under this policy; and the Insured, and any of its members, partners, officers, directors, stockholders and employees that the Company deems necessary, shall attend hearings and trials and assist in securing and giving evidence and obtaining the attendance of witnesses." Interview with Larry Gill, *supra* note 107.

[165] *Id.*

[166] As used here, "provider" refers to a physician. Because of both personal jurisdiction concerns and the multiple legal theories that may be used to find corporate liability, e.g., ostensible agency and respondent superior liability, the analysis of corporate liability quickly becomes complex. Therefore, a detailed discussion of corporate liability is beyond the scope of this article.

[167] For this hypothetical it is assumed that the medical malpractice carrier's place of business is in the same jurisdiction as the plaintiff who is injured. A more complex analysis of the malpractice carrier's liability would be required if the insurer was a foreign corporation such as Lloyds of London. A detailed discussion of malpractice coverage provided by foreign corporations is beyond the scope of this article.

ity for telemedicine malpractice.[168] Therefore, not only will Indian model providers be able to undercut American providers because of the use of low-wage physician labor force, Indian model providers will also be able to undercut all providers because of their greater ability to go without insurance coverage. How long this anomalous situation is tolerated is subject to speculation.

III. REMOVING TRADE BARRIERS: NAFTA AND GATS

While parties in remote countries can settle their personal jurisdictional and insurance contract disputes through individual litigation, from a societal point of view, individual litigation is inefficient because it requires continuous reinvention of the wheel. For society, a more efficient system would be one where the rules of jurisdiction and liability were transparent, such that they did not have to be elucidated on a case-by-case basis, thereby streamlining litigation.[169] More generally, international telemedicine litigation could be made more efficient if the rules of jurisdiction and commerce were recognized by parties on both sides of the ocean.

Historically, the rules of transoceanic/transnational commerce were standardized by international trade treaties. In the health care arena, both GATS and NAFTA contemplate regulation of transoceanic medical commerce.[170] Interestingly, Canada is taking a leading position in the debate on the impact of GATS and NAFTA, perhaps out of economic fear of its neighbor to the south.[171] And while both of these treaties may ultimately be modified to accommodate the nuances of transoceanic telemedicine, it is unlikely that basic principles underlying these treaties will be revised.[172] Accordingly, if we are to

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[168] *See also* Interview with Edward P. Richard, Professor of Law, Louisiana State University (Apr. 22, 2005) ("If the doc refuses to defend at all, the insurer is probably not going to have to pay.").

[169] *See* Leah B. Mendelsohn, Comment, *A Piece of the Puzzle: Telemedicine as an Instrument to Facilitate the Improvement of Healthcare in Developing Countries?*, 18 EMORY INT'L L. REV. 151, 168 (2004) ("Currently, technology has advanced faster than the law, and, thus, there are no international treaties or global agreements about telemedicine."). *See also* McLean, *supra* note 1, 247-54.

[170] Under GATS, health care services are to be viewed broadly. GATS, *supra* note 11, art. I.3.

[171] *See* JIM GRIESHABER-OTTO & SCOTT SINCLAIR, BAD MEDICINE: TRADE TREATIES, PRIVATIZATION AND HEALTH CARE REFORM IN CANADA 9–10 (2004) (discussing "whether private financing and for-profit delivery of health care should play a greater role in Canada"); Blum, *supra* note 39, at 92.

[172] Trade treaties that specifically involve the telecommunication industry, including some part of GATS, specifically the 1997 Telecommunication Annex, and

understand the future of international telemedicine, it is necessary to have a clearer understanding of what GATS and NAFTA have in common, how they are significantly different, and just what they have to say about the jurisdiction and the insurance industry in a global marketplace.

A. A Brief History of Multilateral Service Treaties

Before launching into the specifics of the GATS and NAFTA treaties, a brief overview of the history of multilateral treaties is appropriate to provide orientation and perspective.[173] Prior to the twentieth century, trade conflicts between nations were largely resolved on the basis of colonial "gun-boat diplomacy"—i.e., the government with the strongest military imposed its will on weaker nations and private parties.[174] Under gun-boat diplomacy, which was outlawed by the U.N. Charter,[175] the concept of "might makes right" prevailed and private parties lacked standing under such international law to challenge the authority of sovereign nations to promulgate a trade policy.[176] But these notions changed with the rise of transoceanic commerce after World War II.[177]

GATS, the older of the two treaties under review here, represents a refinement of the General Agreement on Tariffs and Trade (GATT), which was focused on trade-in-goods.[178] GATT, originally signed in 1948, did not anticipate the explosion of trade-in-services that was to characterize global commerce at the end of the last century.[179] Accordingly, to eliminate many of the distortions in the service sector

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NAFTA, are relevant here, but are beyond the scope of this article.

[173] The analysis of the impact of trade treaties concerning telemedicine offered here is substantially different than provided by Blum. Blum, *supra* note 39. In his seminal article on telemedicine and trade treaties, Professor Blum divided international law that affects telemedicine into public international law, international law-making bodies, private international law, and privacy law. *Id.* The current article deals primarily with the first of these subdivisions, and less with other subdivisions.

[174] Matthew B. Cobb, Comment, *The Development of Arbitration in Foreign Investment*, MEALEY'S INT'L ARB. REP., Apr. 2001, at 48, 49.

[175] *Id.*

[176] *Id.*

[177] Such rules for trade-in-services tend to discourage private investment in foreign countries. *See* Ray C. Jones, Note, *NAFTA Chapter 11 Investor-to-State Dispute Resolution: A Shield to Be Embraced or a Sword to Be Feared?*, 2002 BYU L. REV. 527, 528.

[178] *See* Ian S. Mutchnick et al., *Trading Health Services across Borders: GATS, Markets, and Caveats*, HEALTH AFF., Jan. 25, 2005, http://content.healthaffairs.org/cgi/content/full/hlthaff.w5.42/DC1.

[179] *Id.* Between 1980 and 2000 the volume of international trade in commercial services increased 400 percent; from $364 billion to $1.4 trillion. *Id.*

that were created as unintended consequences of GATT, this treaty was supplanted in 1994, during the Uruguay Round of GATT negotiations, by the creation of the World Trade Organization (WTO). Designed to be both a forum to further trade negotiations and a forum for the adjudication of trade disputes,[180] the WTO has attracted most of the world's nations as members. GATS, in turn, is the fundamental document controlling the operation and scope of the WTO's member-nations rights and relationships.

The scope of GATS is broad and covers all measures that "affect" trade-in-services.[181] However, GATS specifically excludes from coverage services provided in the "exercise of governmental authority," which are services that have neither a commercial nor a competitive basis.[182] But this loophole is not wide enough to allow either the United States or Canada to shelter their respective governmental involvement in the medical sectors of their economies from the reach of GATS.[183] Conversely, this exception could become important if the United States were to adopt a government-run single-payor health care system as has been suggested by the Institute of Medicine (IOM)[184] and supported by economic analysis.[185]

NAFTA, on the other hand, which was also signed into existence in the early 1990s, was negotiated by President George H. W. Bush under rules of "fast track" authority.[186] Rather than creating a global trade organization, NAFTA creates a trading block between the United States, Canada, and Mexico by removing impediments to commerce across the borders of these countries. In terms of stimulating trade, NAFTA is an unqualified success.[187] Critics of NAFTA, however, have argued that because of its notorious investor-to-state

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[180] Eric A. Posner & John C. Yoo, *Judicial Independence in International Tribunals*, 93 CAL. L. REV. 1, 44-49 (2005). Under both GATS and NAFTA, trade disputes are to be resolved via arbitrations. Jones, *supra* note 177, at 534-36 (detailing the NAFTA arbitration procedure).

[181] GATS, *supra* note 11, art. I.1.

[182] *Id.* art. I.3.

[183] GRIESHABER-OTTO & SINCLAIR, *supra* note 171, at 25.

[184] INST. OF MED., INSURING AMERICA'S HEALTH: PRINCIPLES AND RECOMMENDATIONS 11 (2004).

[185] *See* David U. Himmelstein & Steffie Woolhandler, *Mayhem in the Medical Marketplace*, MONTHLY REV., Dec. 2004, *available at* http://www.monthlyreview.org/1204himmelstein.htm.

[186] Omnibus Trade and Competitiveness Act of 1988, Pub. L. No. 104-418, 102 Stat. 1129 (1988). Briefly, "fast track" authority limits the ability of Congress to modify terms of a treaty negotiated under this act. *Id.*

[187] By 1998, "the total three-way trade among Canada, Mexico, and the United States [in the first five years] reached approximately $752 billion." Jones, *supra* note 177, at 527.

clause, which provides individuals with a private cause of action against national governments, NAFTA should not be considered a trade agreement, but rather an investment agreement.[188]

B. General Structure of Treaties and their Impact on Medicine

As a general rule, both GATS and NAFTA are top-down treaties, which means that unless there is a specific provision to the contrary, provisions in these treaties cover all aspects of the service sector of a WTO member-nation's economy.[189] Both of these treaties also have mechanisms to ensure that trade-in-services are liberalized with time.[190] That is, under both GATS and NAFTA, trade-in-services laws and regulations are to move progressively toward free trade-in-services, as characterized by the absence of trade barriers. Under GATS, members of the WTO are expected to lower trade barriers for services during each round of trade negotiations.[191] In contrast, under NAFTA, trade barriers that were in existence prior to 1994 may remain. However, NAFTA liberalizes trade-in-services by directing that trade barriers in existence cannot be made more onerous[192] and that if a NAFTA inconsistent regulation is amended, the amendment must be made more NAFTA consistent, which means the trade barriers are to be made less restrictive.[193]

GATS and NAFTA apply to virtually all medical services worldwide. This is because, contrary to popular belief, most health services worldwide are privately funded[194] and not subject to general exclusion for governmental services. Because most nations cannot protect their health care sectors from the liberalizing effects of GATS and NAFTA indefinitely, these treaties will have a tendency to open up health care markets, including the trillion-dollar U.S. market,[195] to global compe-

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[188] Pub. Citizen, North American Free Trade Agreement (NAFTA), http://www.citizen.org/trade/nafta (last visited Jan. 5, 2006).

[189] GRIESHABER-OTTO & SINCLAIR, *supra* note 171, at 23. However, some caveats exist: under GATS there are several bottom up-clauses, which apply only to specific industries. *Id.* Additionally, under both GATS and NAFTA, there are mechanisms for opting out so that a country can protect specific industries. *See id.* A detailed discussion on the strategies that a nation might use to protect a service or investment industry is beyond the scope of this article.

[190] As will be demonstrated in the ensuing sections, many of the specific clauses of GATS and NAFTA reinforce the notion that trade barriers are to be eliminated to facilitate free trade.

[191] GATS, *supra* note 11, arts. XIX-XXI.

[192] *See* NAFTA, *supra* note 12, art. 1202.

[193] *Id.* at art. 1206.

[194] Mutchnick et al., *supra* note 178.

[195] *See* MICHAEL LEWIS, THE NEW NEW THING: A SILICON VALLEY STORY 99

tition. If a nation allows its states or provinces to erect trade barriers to protect a local health care market, that nation exposes itself to the imposition of various trade sanctions. In fact, considering that the United States has already benefited from membership in the WTO and NAFTA, it is somewhat surprising that other members of the world trade community have not been more vocal in their petitioning to enter into the U.S. domestic telemedical market.

C. Clauses Common to GATS and NAFTA

GATS and NAFTA contain several common clauses, including clauses covering Most Favored Nation (MFN) and National Treatment (NT) status, Public Monopolies and State Enterprises, Government Procurement, and Intellectual Property.[196]

1. MFN & NT Clauses

GATS and NAFTA, for the first time in history of international law, articulate the principle that discrimination on the basis of nationality is not tolerated.[197] The primary mechanisms by which GATS and NAFTA advance this principle of non-discrimination is through the MFN and NT clauses. The MFN clause is a "favor one, favor all" clause that requires WTO members to give the best trade-in-service terms offered to one country to all countries.[198] The NT clause, on the other hand, requires member-nations of GATS and NAFTA to bestow the same regulatory treatment on foreign services providers that they bestow on their domestic service providers.[199] In fact, under NAFTA, the NT clause guarantees that corporations in member-nations do not have to relocate their operations or employees to have access to the markets of other member-nations.[200] The MFN and NT clauses apply not only to explicit discrimination based on nationality, but also to regulations that seem neutrally-worded, yet in practice result in discrimination.[201] Accordingly, even if a regulation is nationality-neutral

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(2000).

[196] Because the government procurement aspects of these treaties are not currently applicable to the health care sector and discussion of international intellectual property is beyond the scope of this article, these clauses will not be considered further.

[197] *Id.* at 25.

[198] GATS, *supra* note 11, art. II. *See* NAFTA, *supra* note 12, art. 1203.

[199] GATS, *supra* note 11, art. XVII. *See* NAFTA, *supra* note 12, art. 1202. Under GATS, national treatment only applies to listed services. *Id.*

[200] Key NAFTA Sector-Specific Provisions, http://www.mac.doc.gov/nafta/3002.htm (last visited Feb. 15, 2006).

[201] Under GATS, application of the National Treatment clause is complicated

on its face, if in actual application of the regulation foreign services providers are discriminated against because of their nationality, then such a clause violates both GATS and NAFTA.[202]

Further, although both GATS and NAFTA recognized that member nations have the right to police their economies, the MFN and NT clauses of these multilateral treaties place limits on the extent to which member-nations can exercise their economic regulatory authority.[203] So, while it is true that under GATS and NAFTA member-nations are free to exercise "any necessary disciplines" to ensure and enforce licensure, certification, and technical standards in services, these market disciplinary measures may not be "more burdensome than necessary to ensure the quality of the service."[204] Implicit here is the concept that licensure should not be used as a trade barrier and that the process for licensure determination must be transparent so as to ensure that licensure does not turn on some form of unintentional national discrimination. In sum, the cumulative effect of the MFN and NT clauses is that state and federal governmental agencies may not regulate the health care market by: (1) CONs, (2) rationing the number of professional licenses issued, or (3) capping the total value of health care services reimbursed, because each of these regulations establishes quotas that could indirectly favor one nation over another in the marketplace.[205]

In commenting on the implication of MFN and NT clauses for the health care sector, international law attorney Mathew Yeo observed that the United States will have a hard time arguing for further liberation of trade barriers until it cleans its own house and simplifies, if not eliminates, the matrix of state law regulations.[206] Thus, what Mr. Yeo is suggesting is that the United States will not reap further economic benefits under GATS and NAFTA, unless America moves its health

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by the way the service is provided; i.e., the service's mode type. *See infra* Part III.D.2.

[202] GRIESHABER-OTTO & SINCLAIR, *supra* note 171, at 25-26.

[203] *See, e.g.*, GATS, *supra* note 11, art. XIV (noting that nothing in this treaty is to be used to prevent a member country from adopting or enforcing necessary measures "to protect human, animal or plant life or health"); *and* Debra J. Lipson, *GATS and Trade in Health Insurance Services: Background Note for WHO Comm'n on Macroeconomics and Health* 3 (Commission on Macroeconomics & Health, Working Paper No. WG 4:7, June 2001), *available at* http://www.cmhealth.org/docs/wg4_paper7.pdf (observing that the use of the health exception clause to regulate the medical sector of a nation's economy will be subject to a narrow interpretation of what is "necessary" to protect health).

[204] GRIESHABER-OTTO & SINCLAIR, *supra* note 171, at 31 (citation omitted).

[205] *Id.* at 30.

[206] Yeo, *supra* note 60. There is little question that U.S. corporations want to benefit from GATS and NAFTA and expand into the economies of other nations. *See generally* HERTZ, *supra* note 129.

care system toward a national medical licensure system that does not discriminate against foreign providers.[207] Supplanting a system of state medical licensure with a single national system would, of course, eliminate the primary trade barrier protecting the U.S. domestic telemedicine market. Given that access to the telemedicine market is not limited by capital requirements, a remote telemedical provider with a national medical license would be free to compete for patients in the lucrative U.S. health care market. Moreover, if the remote provider uses the Indian model for telemedicine delivery, which is characterized by its low-wage providers and diminished concern for medical malpractice liability, such a remote provider will likely provide unprecedented price-cutting competition.

2. Public Monopolies and State Enterprises

In addition to the MFN and NT clauses, GATS and NAFTA both contain clauses that limit public monopolies and state enterprises.[208] These provisions prevent the governments of member-nations from moving into a sector of their economy and establishing a monopoly under the government exclusion clause in order to gain economic leverage or protect an industry from foreign competition.[209] Under both treaties, the primary enforcement mechanism behind the public monopolies and state enterprise clauses is the need to provide compensation. Under GATS, a nation that sets up an abusive governmental enterprise for the purpose of market domination must either compensate a foreign service provider for their loss of market share or face economic retaliation from the foreign services provider's home nation.[210] Under NAFTA, if a member-nation sets up an abusive governmental enterprise or monopoly, any foreign provider whose investments are impaired has a private right of action against the abusing government.[211]

At present, perhaps the major concern of the application of the public monopolies and state enterprises is how these clauses will be

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[207] Yeo, *supra* note 60. Professor Yeo observes that even if the issue of board certification is administered even handedly, it could be used as part of a regulator scheme in lieu of licensure. *See id.* However, in its present form, board certification is a not a workable alternative to national licensure because board certification in the United States requires completion of a U.S. residency. Thus, board certification indirectly discriminates against some providers and will therefore be inconsistent with the national treatment clauses of GATS and NAFTA.

[208] GATS, *supra* note 11, art. VIII; NAFTA, *supra* note 12, art. 1502 & 1503.

[209] Grieshaber-Otto & Sinclair, *supra* note 171, at 27.

[210] *Id.*

[211] See the discussion of investor-state compensation *infra* Part III.E.3.

interpreted. Thus far, neither GATS nor NAFTA has had an arbitration action concerning these clauses. Conceptually, however, expanding the public health sector of a member-nation's economy, which has arguably occurred in the United States with the passage of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA),[212] could trigger compensation claims by foreign providers. In addition, it is an open question whether a nation can, as Canada appears to have done, expand its telemedical capacity under the guise of its public health department,[213] and still remain consistent with the GATS and NAFTA provisions regarding public monopolies and state enterprises.

D. Clauses Unique to GATS

1. Market Access and Domestic Regulations Restrictions

GATS contains three unique clauses that place restrictions on market access,[214] domestic regulations,[215] and trade operations.[216] In fact, so unique is the market access restrictions clause that it is not found in any other multilateral treaty.[217] The market access restrictions clause prohibits WTO member-nations from capping: (1) the number of suppliers, (2) the value of transactions, or (3) the number of persons employed in any service.[218] Consistent with other provisions in GATS, the market access restrictions clause not only applies to "numerical quotas or the requirement of an economic needs test,"[219] but is also applicable to any monopoly or exclusive service provider agreements that are inconsistent with GATS.[220] Thus, if the United States should ever commit its health care services sector to trade under GATS, the market access restrictions clause would prohibit any state from limiting the number of providers doing business in its borders or establishing health care spending caps.[221] As the market access

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[212] Medicare Prescription Drug, Improvement, and Modernization Act of 2003, Pub. L. No. 108-173, 117 Stat. 2066 (2003).

[213] McLean, *supra* note 1, at 261-62.

[214] GATS, *supra* note 11, art. XVI.

[215] *Id.* at art. VI.4.

[216] *See infra* Part III.D.2.

[217] GRIESHABER-OTTO & SINCLAIR, *supra* note 171, at 30.

[218] *Id.* at 29.

[219] GATS, *supra* note 11, art. XVI. This clause is applicable regardless of mode of commerce or sector of the economy. *Id.*

[220] GRIESHABER-OTTO & SINCLAIR, *supra* note 171, at 29.

[221] *Id.* The concept of committing a sector of an economy to trade-in-services will be developed in the next section.

restrictions clause is framed in absolute terms, this clause actually imposes a greater degree of restriction on the ability of a government to regulate its economy than does GATS's MFN and NT provisions.[222] In short, the market access restrictions clause of GATS could someday be used as powerful leverage to open the domestic telemedicine market to foreign competition.

Similarly, the proposed domestic restrictions clause is of concern to the future of telemedicine because under this clause any licensing, certification, and technical standards imposed by a nation on a particular sector of its economy must not be "more burdensome than necessary to ensure the quality of the service."[223] Several existing forms of health care regulations could potentially run afoul of this clause, including: (1) obligations on providers to accept all patients, (2) limitations on fees so that access to health care is available to all, and (3) disciplining providers with licensure revocation rather than using a scheme that fines or publishes wrong-doers' names in public forums.[224] In short, if GATS's domestic restrictions clause should ever become applicable to the U.S. health care sector, this clause could seriously undermine the authority of state boards of medical examiners by limiting the ability of these governmental agencies to adjudicate and discipline provider's quality of care and professional conduct.

2. Operational Clause: Commitments and Modes[225]

Despite the broad wording of GATS, its provisions for free trade are not applicable to a member-nation's entire economy.[226] Rather, GATS only attaches to certain sectors of a member-nation's economy, depending on that country's commitments and the mode of commerce of the particular service.[227] Under GATS, the purpose of a commitment is to provide foreign investors in a country's economy with a legally enforceable guarantee that a member's economy is stable and predictable with respect to market conditions in a particular sector.[228]

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[222] *See id.* at 26.

[223] GATS, *supra* note 11, art. VI.4.

[224] Grieshaber-Otto & Sinclair, *supra* note 171, at 31.

[225] This section is intended to provide an overview of GATS' commitments and modes. Because of the details involved, this material quickly becomes complex. Accordingly, the reader is advised that this section is not a substitute for a more formal study of the relevant sections of GATS.

[226] Lipson, *supra* note 203, at 3 (providing that there is an exemption clause for health reasons).

[227] *Id.* at 2-3.

[228] *Id.* at 3.

Thus, if a WTO member-nation makes a commitment to trade in a particular service, that country is obligated to (1) administer its domestic economic regulations in a "reasonable, objective and impartial manner;" (2) provide "adequate procedures to verify the competence of professionals of any other Member;" and (3) conform its regulations to common "international standards" for services.[229] In some cases a commitment is given by a country in the belief that the commitment will improve a member's economy, whereas in other cases a country gives a commitment because leverage is applied to that country, e.g., debt cancellation, to open its market.[230] Thus far, eighty-eight WTO members have made some commitment on behalf of their health and dental sector.[231]

But even if a country commits its health care sector that does not necessarily mean the country has opened its borders to foreign providers regardless of trade mode. Under GATS, each sector of a nation's economy is further subdivided into modes based on how a particular service is supplied.[232] There are four supply modes based on the geographic relationship between the service supplier and consumer. When a nation commits a sector of its economy under GATS, that nation may only make a commitment for a particular mode. Accordingly, the mode by which a service is supplied is a non-trivial matter under GATS because different aspects of a sector of a nation's economy—like health care—may receive different degrees of commitment depending on the mode of the service's delivery.

a) Mode 1

Services supplied by Mode 1 are services that are provided over international borders.[233] That is, under Mode 1, a service is provided by a supplier in one country to a purchaser in another country. International telemedicine is most frequently classified as a Mode 1 service.[234] A characteristic of Mode 1 services is "the absence of [a] regulatory framework[ ] . . . " for insurance, including medical malpractice, confidentiality, and payment.[235] This lack of regulation is

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[229] GATS, *supra* note 11, art. VI.

[230] *See generally* HERTZ, *supra* note 129.

[231] WHO INDIA REPORT, *supra* note 2, at 16.

[232] A detailed discussion of the regulation of global commerce in services based on mode of supply is beyond the scope of this article.

[233] Lipson, *supra* note 203, at 2.

[234] GRIESHABER-OTTO & SINCLAIR, *supra* note 171, at 117 (stating that electronic transactions are equivalent to face-to-face transactions). *See* Yeo, *supra* note 60.

[235] Chanda, *supra* note 115, at 31.

interesting considering that Mode 1 transference of health services is already a multiple-billion dollar industry.[236] However, the regulatory anarchy associated with Mode 1 is unlikely to remain much longer because more systematic regulations would eliminate a substantial amount of uncertainty in the market, just as regulations of the oil industry help stabilize the market by eliminating a substantial amount of uncertainty in the market.

b) Mode 2

Services supplied under Mode 2 are services that are consumed while a person is abroad.[237] For example, had GATS been in effect when Europeans and Arabs traveled to Houston to undergo cardiac surgery in the 1960s and 1970s,[238] consumption of the cardiac services would have been classified under Mode 2. Although in 1998 the market for the supply of health care services under Mode 2 was estimated to be $1.2 billion,[239] as international telemedicine becomes more commonplace in the future, the market for Mode 2 health care services is likely to contract. The convenience of telemedicine will obviate the need for patients to travel abroad to obtain specialized health care. After all, improving access to health care specialists is a major selling point for telemedicine. Accordingly, in the future it is likely that the only persons purchasing health care under Mode 2 will be those traveling abroad on business or holiday that have the misfortune of becoming ill.

c) Mode 3

Mode 3 services are the converse of Mode 2: Rather than have the consumer traveling to receive a service, under Mode 3, suppliers set up a commercial presence in a foreign country.[240] To date, most WTO members who have made health care related commitments have done so under Mode 3.[241] Thus, Mode 3 has become the preferred mode by which major players in the health and life insurance markets have

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[236] The size of a single contract for telemedical services can be staggering. For example, the United Kingdom's NHS ten-year contract for electronic medical records management was deemed to be worth £5.5 billion. GRIESHABER-OTTO & SINCLAIR, *supra* note 171, at 102.

[237] Lipson, *supra* note 203, at 2.

[238] *See generally* THOMAS THOMPSON, HEARTS; OF SURGEONS AND TRANSPLANTS, MIRACLES AND DISASTERS ALONG THE CARDIAC FRONTIER (1971).

[239] Chanda, *supra* note 60, at 58.

[240] Lipson, *supra* note 203, at 2.

[241] Mutchnick et al., *supra* note 178.

expanded abroad.[242] In the clinical arena, to provide better service for its Arab clientele, the Mayo Clinic recently opened an office in Dubai.[243] But as with Mode 2 provided health care services, as telemedicine services become more commonplace, fewer physicians will need to be deployed to remote locations. In part, few physicians will be relocated because of the costs involved, especially if telemedicine proves more cost-effective, and in part because the host nation will want to see its own physicians employed.

For institutional providers, the future is less clear. As greater commercial presence by the insurance industry is established in foreign countries, the demand for Mode 1 telemedical services and Mode 3 franchised medical services is likely to increase because a robust insurance market fosters the growth of the medical services market.[244] In fact, because franchised health care expansion under GATS's Mode 3 is an extension of the traditional business model of the "bricks and mortar" age to expand a health care operation, Mode 3 health care expansion will remain for the foreseeable future as a significant threat to telemedical growth. Not only is a franchise business structure more familiar to the business communities worldwide, it is probably safe to say that at present, most patients, when given the choice, would elect to shake hands with a physician than turn on a television set and merely see the physician.

Also, under Mode 3, WTO members retain a wide-scope of regulatory control over their private health insurance market.[245] Members may define minimum benefit packages and may, under certain circumstances, exclude some foreign insurers despite commitments to

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[242] Lipson, *supra* note 203, at 4.

[243] Mayo Clinic in Dubai Opens, http://www.ameinfo.com/58634 (last visited Feb. 15, 2006). *See also* Brenda J. Buote, *When Bigger Isn't Better: Community Hospitals Offering Specialty Care to Compete with Boston*, BOSTON GLOBE, July 7, 2005, at 1 (providing that if quality is not an issue, patients prefer to receive health care from local providers).

[244] Mutchnick et al., *supra* note 178. Since the enactment of the Gramm-Leach-Bliley Act, Pub. L. No. 106-102, 113 Stat. 1338 (1999), which allowed for increased competition in providing financial services between insurers and national banks, insurers have increasingly been interested in expanding abroad. *See* Waterfield, *supra* note 108, at 292. *See also* Scott A. Sinder, *The Gramm-Leach-Bliley Act and State Regulation of the Business of Insurance - Past, Present and . . . Future?*, 5 N.C. BANKING INST. 49 (2001) (discussing the operational complexities of the of the Gramm-Leach-Bliley Act). Compare, once a developing country has a major insurer, it may restrict the number of foreign telemedicine providers to protect its indigenous physician labor market and fight the exodus of physician that is part of a "brain drain" on the country.

[245] Lipson, *supra* note 203, at 4.

opening their insurance products in the market.[246] The reason for this seeming contradiction between the intent of the MFN and NT clauses and insurance expansion under Mode 3 stems from the nature of health insurance.[247] More specifically, GATS allows WTO members to exclude some foreign health insurers from their domestic markets because of the need to establish a risk pool. To create a risk pool an insurer must contemplate: (1) the proportion of the population from whom premium collection is difficult (if not impossible), (2) the size of the population that requires insurance, and (3) the mechanisms available to control the costs per person.[248]

Primarily because of the need to control the number of individuals who will actually pay premiums into a risk pool, evidence exists that more efficient pools are constructed when access to an insurance market is limited.[249] Absent a mechanism to limit the number of insurers in a market, if the country operated a public health care service, the country's treasury could be at risk. To illustrate this concept, consider a hypothetical market with an abundance of health insurers. Some of these insurers would find it advantageous to sell policies only to the healthy individuals, thereby pushing the sicker patients onto the state-sponsored insurance program. With many insurers in the market, it might be difficult to detect which insurers were steering the poor-risk patients to the pubic health service. Finally, exclusion of some foreign insurers is desirable because it facilitates the development of a comprehensive insurance regulatory scheme, which, in turn, helps to eliminate health insurance fraud and unfair competition.[250]

Because market access is likely to be limited, competition for Mode 3 health insurance expansion is likely to be fierce. This is especially true in developing countries. Insurers have known for years that as wages and access to health care improve in developing countries, these countries are increasingly ripe for health insurance growth.[251] In

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[246] *Id.*

[247] *Id.* at 5.

[248] John A. Sbarbaro, *Trade Liberalization in Health Insurance: Opportunities and Challenges: The Potential Impact of Introducing or Expanding the Availability of Private Health Insurance within Low and Middle Income Countries* 3 (Comm'n on Macroeconomics & Health, Working Paper No. WG 4:6, Dec. 2000), *available at* http://www.cmhealth.org/docs/wg4_paper6.pdf. *See also* Chaoulli v. Quebec, [2005] S.C.C. 35 (discussing the need to exclude foreign insurance companies to protect the public health care system).

[249] *See* Lipson, *supra* note 203, at 9; Chaoulli, 2005 S.C.C. 35.

[250] Lipson, *supra* note 203, at 9.

[251] Sbarbaro, *supra* note 248, at 2. *See* Mark Landler, *Blaming the Foreigners: Report to German Ruling Party Faults Private Investors*, N.Y. TIMES, May 5, 2005, at C1 (observing that even Germany has been complaining of the expansion of

fact, historically, a country's health insurance market's growth parallels that country's economic growth.[252] Thus, for more than a decade the World Bank's lending policies have been aimed at promoting the development of private health insurance markets in developing countries, even if doing so is a detriment to a developing county's system of public-funded health insurance.[253]

But, from the developing country's point of view, letting foreign insurers into their country via Mode 3 raises other complex concerns. While it is true that allowing private health insurance into a market has an erosive effect on risk-pool formation,[254] a mature private insurance market tends to minimize the flight of domestically trained physicians to more advanced countries.[255] That is, a mature health insurance market helps a developing country fight the brain-drain of its physician labor pool,[256] while at the same time promoting the development of two-tiered health systems in developing countries[257] that may impair a developing country's effectiveness to treat communicable diseases.[258]

d) Mode 4

Services supplied under Mode 4 are services that are related to the movement of natural persons—not commercial operations—across international trade borders. Although most commentators classify telemedicine as a Mode 1 supplied service, this may only be true for telemedicine provided under the Indian mode. When telemedicine is provided under the nighthawk model, where U.S. physicians obtain visas to stay in Australia or Spain, health care services are actually

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U.S. financial institutions into its domestic market).

[252] Sbarbaro, *supra* note 248, at 3.

[253] *Id.* at 2.

[254] *Id.* at 6.

[255] *Id.* This problem is not necessarily limited to developing countries because as the United States moves towards more first-dollar health care coverage with Healthcare Savings Accounts, the United States will erode its own ability to develop an adequate risk pool for medical insurance. *See id.* A detailed discussion of Healthcare Savings Accounts is beyond the scope of this article.

[256] Although financial incentives heavily influence behavior, a detailed discussion of this subject is beyond the scope of this article. *But see* STEVEN D. LEVITT & STEPHEN J. DUBNER, FREAKONOMICS 19-51 (2005) (discussing the unintended effects of financial incentives).

[257] Sbarbaro, *supra* note 248, at 6. There is data to indicate that the health insurance markets in developing countries are maturing independent of the GATS. *See* Lipson, *supra* note 203, at 5.

[258] Sbarbaro, *supra* note 248, at 14 (speculating that introduction of private health insurance in developing countries will erode the WHO's ability to treat communicable disease).

provided by the movement of individual providers to remote foreign locations.[259]

Mode 4 is the least utilized and least scrutinized mode for expanding a market under GATS.[260] Perhaps this is because Mode 4 services are extricably linked with immigration concerns,[261] licensure, and certification requirements.[262] Accordingly, some commentators have argued that Mode 4 commerce will only become an important mode of commerce if, as a policy, WTO members adopt the lower quality market's requirements.[263] Using the higher standard would be undesirable because it would tacitly recognize a place for trade barriers. This would certainly be an interesting standard for medical licensure. But even if a "least qualified" rule were adopted for health care services it would not necessarily reverse provider migration from developing to developed countries,[264] a major concern of developing countries.[265]

E. Clauses Unique to NAFTA

Health services are a sensitive subject under NAFTA because of the very different health care systems in the United States, Canada, and Mexico.[266] NAFTA brings discussion of this sensitive subject to the forefront because it encourages cross-border mobility of health professionals and consumers and "facilitate[s] mutual recognition of qualifications and training among the countries."[267] Additionally, NAFTA facilitates direct foreign investment in cross-border health

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[259] One could even argue that nighthawk radiology actually involves the establishment of a commercial presence in a remote country. Such an argument would open the door for nighthawk telemedicine to be classified as a Mode 3 service.

[260] Mutchnick et al., *supra* note 178.

[261] Interestingly, not only do the United States, Canada, United Kingdom, and Australia have approximately the same density of physicians (roughly 250 per 100,000 population), all four countries have a similar percentage (25 percent) of foreign physicians. *See* Fitzhugh Mullan, Quantifying the Brain Drain: International Medical Graduates in the United States, the United Kingdom, Canada and Australia (Feb. 4, 2005), *available at* http://www.academyhealth.org/nhpc/foreignpolicy/mullan.pdf (handout accompanying address at the AcademyHealth 2005 Health in Foreign Policy Forum), This similar percentage of foreign medical providers suggests that immigration laws play an important role in physician migration.

[262] *See* Chanda, *supra* note 115, at 12.

[263] *See* Michelle Sforza, Pub. Citizen, Trade Agreements & the Corporate Takeover of US Healthcare (Apr. 2001), http://www.citizen.org/trade/wto/gats/health/articles.cfm?ID=6003.

[264] *See* Chanda, *supra* note 115, at 9-12.

[265] Chanda, *supra* note 60, at 22-23.

[266] *Id.* at 70.

[267] *Id.* at 71.

services.[268] But to understand the importance of NAFTA to telemedicine, it is necessary to examine NAFTA's unique clauses: performance requirements, minimal standards, and investor-to-state relationship.

1. Performance Requirements

Performance requirements "are government measures that oblige investors to meet certain conditions, for example: to purchase locally; transfer technology; or to achieve other local economic development, environmental or social policy benefits."[269] Under NAFTA, member-nations are prohibited from imposing performance requirements connected "with the establishment, acquisition, expansion, management, conduct or operation of an investment. . . ."[270] In the health care arena, perhaps the most important performance requirement that is prohibited under NAFTA is a governmental mandate that goods and services be purchased locally.[271] Commentators have viewed this clause to mean that state, provincial, and local governments may not prohibit the payment for medical services simply because they are provided by a remote practitioner.[272] By freeing up payments for health care services for foreign providers, NAFTA appears to be a green light for member nations to use international telemedicine to earn a profit.

2. Minimal Standard Treatment

NAFTA's second unique clause concerns minimal standards. Under NAFTA, a host country is to treat foreign investors from member-nations "in accordance with international law, including fair and equitable treatment and full protection and security."[273] Yet, this "seemingly innocuous obligation" has resulted in some unexpected trade arbitration outcomes, as the minimal standard treatment clause has been used to demonstrate that a NAFTA member failed to promulgate regulations with sufficient transparency vis-à-vis foreign

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[268] "Up to 100 per cent foreign investment is permitted in hospitals and clinics." *Id.* at 72.

[269] GRIESHABER-OTTO & SINCLAIR, *supra* note 171, at 32.

[270] NAFTA, *supra* note 12, art. 1106. This prohibition is further reinforced by NAFTA's failure to exempt health care from the operation of the social services reservations clause; which under limited circumstances, could allow for imposition of performance requirements that are NAFTA inconsistent. *See id.* annex II.

[271] GRIESHABER-OTTO & SINCLAIR, *supra* note 171, at 32.

[272] *Id.* 32-33. Under this view the United States could not limit foreign providers from receiving payment to for medical services, as is the current U.S. policy.

[273] NAFTA, *supra* note 12, at art. 1105.

investors.[274] Thus, in actual operation, NAFTA's minimal standard treatment clause allows foreign investors to insinuate that a member-nation did not promulgate its trade policies fairly, thereby exposing that country's trade policies to second-guessing by international trade tribunals.[275] For telemedicine, this NAFTA clause is a double-edged sword: on one hand, it creates regulatory uncertainty thereby inhibiting foreign investment, and on the other hand, it may ultimately be a potent weapon to challenge the validity of state or provincial licensure laws that are facially-neutral but functionally act to protect the local medical community.

3. Investor-State Relations

The final clause unique to NAFTA concerns the investor-to-state relationship.[276] This clause is so unique, it is not found in any other multilateral trade agreement.[277] Under other multinational trade agreements, including GATS, only member-nations can bring trade disputes for arbitration[278] In such disputes, the complaining member-nation bears the burden of proof to demonstrate that one of its business organizations was harmed by the legislative action of another member-nation.[279] In contrast, NAFTA's investor-to-state relationship clause grants investors in the economy of a foreign member-nation with unprecedented rights, including: (1) member-nations are prohibited from expropriating a foreign investor's property except for a public purpose and only then after compensation,[280] (2) aggrieved investors have the right to bring a private action against a member government,[281] and (3) because this clause is binding on the member-nation treasury, if the arbitration tribunal finds the investor to be aggrieved, this clause is enforceable against the member's treasury.[282] In fact, NAFTA's investor-to-state relationship clause is a major reason that NAFTA critics have considered this treaty to be not so

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[274] GRIESHABER-OTTO & SINCLAIR, *supra* note 171, at 33.

[275] *Id.*

[276] NAFTA, *supra* note 12, at art. 1110.

[277] GRIESHABER-OTTO & SINCLAIR, *supra* note 171, at 32-34.

[278] World Trade Org. (WTO), GATS: Fact and Fiction: Misunderstandings and Scare Stories: Is Dispute Settlement a Threat to Democracy?, http://www.wto.org /english/tratop_e/serv_e/gats_factfiction12_e.htm (last visited Feb. 16, 2006).

[279] David Greising, *Arming for Trade War: Boeing Sleuths Seek Proof of Improper Subsidies to Airbus*, CHI. TRIB., May 20, 2005, at C1.

[280] NAFTA, *supra* note 12, at art. 1110.

[281] *Id.* at art. 1116.

[282] *Id.* at art. 1135 & 1136.

much a trade agreement, but rather a "notorious" [283] investment agreement.[284]

The importance of NAFTA's investor-state relationship clause for telemedicine is best observed if NAFTA is distinguished from other multilateral trade agreements. Traditionally, international trade treaties provided private investors no rights at all.[285] Moreover, even if an aggrieved private investor enlists the help of his or her government in a trade dispute, as two recent studies demonstrate, an aggrieved investor often goes uncompensated. In the first study, which examines the enforceability of multilateral trade agreements, it was demonstrated that an aggrieved country frequently can only obtain satisfaction in trade tribunals if that country has sufficient economic leverage on other members of a dispute to compel the offending country to live up to its commitments.[286] In the second study, which examined more than three hundred WTO adjudicated trade disputes between 1995 and 2002, it was demonstrated that the WTO's arbitration dispute resolution system was: (1) biased in that the richer countries (United States and European Union) made more extensive use of the tribunal system, (2) damage calculations were problematic because of the multiple trade related factors that needed to be considered, and (3) retaliatory tariffs were ineffective because they distort allocations and are difficult to control such that small countries, who were uninvolved in the original dispute, are the ones most harmed.[287] In short, a telemedical investor in a foreign economy under virtually all multilateral trade agreements will likely go uncompensated if the forum country changes its regulation, unless, of course, the investor is from the United States or the European Union.

In contrast to other multilateral treaties that set up forums for trade disputes, NAFTA's investor-state relationship clause gives the foreign investor the right to sue the offending nation for damages. While this makes it much easier for the foreign investor to recover damages, the investor-state relationship clause also substantially un-

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[283] GRIESHABER-OTTO & SINCLAIR, *supra* note 171, at 11.

[284] Pub. Citizen, *supra* note 188.

[285] *See* Cobb, *supra* note 174, at 49.

[286] Chad P. Brown, *On the Economic Success of GATT / WTO Dispute Settlement*, 86 REV. ECON. & STAT. 811, 811 (2004) (discussing the dispute settlement features that assist governments to live up to their trade liberalization commitments).

[287] Fritz Breuss, *WTO Dispute Settlement in Action: An Economic Analysis of four EU-US Mini Trade Wars*, July 3-5, 2003, *available at* http://www.ecomod.net/conferences/ecomod2003/ecomod2003_papers/Breuss.pdf (paper presented at the International Conference on Policy Modeling (EcoMod2003), Istanbul).

dermines the ability of federal, state, and provincial governments to regulate their economies.[288]

a) *Methanex v. United States*[289]

The *Methanex* case, for example, turned on the issue of whether a state or province of a member-nation has the ability to enforce its own regulations concerning the general welfare of its citizens.[290] In this case, California, using its environmental protection code, ordered the use of the gasoline additive methyl tertiary-butyl ether (MTBE), which is a neurotoxin, to be phased out of usage.[291] Methanex, a major Canadian refinery of MTBE, filed an arbitration action under NAFTA's investor-state relationship clause against California, asserting that its regulation impaired Methanex's investments in California without a public purpose and that it was a violation of NAFTA's minimal standard treatment clause.[292]

Ultimately, the United States prevailed in this action as the arbitration panel ruled non-discriminatory environmental laws are in the public interest; so there was no expropriation. More generally, the years of *Methanex* litigation are likely to leave a residual chill in state legislatures. No state is going to want its legislation tied up in NAFTA-based litigation limbo for years. State legislatures will likely now think twice about the impact of NAFTA on their regulator schemes and proceed with caution when legislating new laws that have significant economic impact. This includes licensure laws. For telemedicine, this may mean that states will be less inclined to use state licensure laws and mandated medical malpractice coverage as trade barriers designed to keep foreign providers out of a local market.

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[288] A review of trade dispute arbitrations brought under GATS did not identify any reports relevant to telemedicine. *See* WTO, Dispute Settlement: The Disputes, Index of Disputes Issues, http://www.wto.org/english/tratop_e/dispu_e/dispu_subjects_index_e.htm (last visited Feb. 16, 2006).

[289] Methanex Corp. v. United States, at 2 (UNCITRAL Trib., Aug. 3, 2005) (Final Award of the Tribunal on Jurisdiction & Merits), http://www.state.gov/s/l/c5818.htm.

[290] *Id.*

[291] *Id.*

[292] *See generally* GRIESHABER-OTTO & SINCLAIR, *supra* note 171, at 33 (discussing the NAFTA minimal standards clause). Methanex asserted that California's real motive in promulgating this environmental regulation was to reward Archer-Daniels-Midland, which manufactured Gasohol, the compound that would replace MTBE in California gasoline. *Id.* at 3-4.

b) *UPS v Canadian Post*[293]

In another ongoing case, the U.S. trucking firm, United Postal Service (UPS), filed a $200 million investor-state relationship action against the Canadian postal service.[294] At issue in this case is whether the Canadian government can subsidize its postal service, thereby making it harder for UPS to compete for business in Canada.[295] At this point, it would seem that UPS has a colorable cause of action against the Canadian government as subsidizing the domestic postal service appears inconsistent with NAFTA's MFN and NT clauses. Accordingly, this case has important implications for the health care sector because it may ultimately limit the degree that the U.S., Canadian, and Mexican governments can subsidize domestic health care providers to the detriment of foreign telemedical investors.[296]

c) *Metalclad v. Mexico*[297]

In a final case, Metalclad, a California corporation wanting to do business in Mexico, filed suit under NAFTA's investor-state relationship clause when it became frustrated with the Mexican licensure process.[298] After Metalclad, a metal recycler, had secured all the necessary Mexican national environmental protection licenses, the company was denied the necessary provincial environmental license needed to build a plant in Mexico.[299] In Metalclad's view, the action of the local Mexican state frustrated its ability to do business in Mexico without a valid public purpose.[300] Accordingly, Metalclad filed an investor-to-state relationship cause of action asserting it was damaged because its time and investments in developing a Mexican subsidiary were rendered worthless by the provincial government's failure to

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[293] *UPS and Canada Post Embroiled in NAFTA Dispute*, DIRECT, Jan. 25, 2005, http://directmag.com/news/nafta-01-25-05/index.html.

[294] *Id.*

[295] *Id.*

[296] This also may explain why the Centre for Minimal Access Surgery, a Canadian remote telemedical provider, declined an opportunity to comment on government funding. McLean, *supra* note 1, at 246 n.219.

[297] U.S. Dep't of State, Metalclad Corp. v. United Mexican States, http://www.state.gov/s/l/c3752.htm (last visited Feb. 17, 2006).

[298] *Id.*

[299] Metalclad Corp. v. United Mexican States, 16 ICSID REVIEW—FOREIGN INVESTMENT LAW JOURNAL (2001), *available at* http://www.worldbank.org/icsid/cases/mm-award-e.pdf (providing the English text of the award).

[300] *Id.*

grant a license.[301] A WTO arbitration panel agreed and awarded Metalclad $16.7 million.[302]

Metalclad suggests that in the U.S. health care sector the various state governments are not going to be able to frustrate foreign telemedicine providers from Canada and Mexico by making the licensure process onerous in order to protect domestic providers. Moreover, *Metalclad* also paves the way for European and Asian telemedical providers to set up subsidiary operations in Mexico or Canada to gain NAFTA investor-to-state relationship clause protection from onerous state trade barriers designed to protect the U.S. health care market. After all, there is nothing to prevent a telemedical signal sent from the United States to Bangalore, India to be re-routed and sent to Cancun, Mexico where the telemedicine provider may actually be located to receive NAFTA protection.[303]

F. Epilogue: GATS, NAFTA and Telemedicine

The actual impact of GATS and NAFTA on international telemedicine has yet to be decided. Still, some things seem clear. Health care providers who are under financial stress[304] are likely to follow the insurance companies overseas in order to tap into new revenue streams and cheaper labor pools. What remains to be seen is whether such multilateral trade-in-health services will improve the quality and affordability of health care in developing countries[305] and whether the United States can protect its own provider market from being offshored to low-wage providers. Where the balance point is set for telemedicine services will, in turn, be influenced by multiple factors such as immigration policies, GATS commitments, and transaction costs.[306] And transactions costs are not trivial concerns in international trade because of (1) the complexity of these transactions, (2) the use of poorly defined terms in the contracts that control these transactions, and (3) the sometimes secretive collateral governmental

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[301] *Id.*

[302] U.S. Dep't of State, *supra* note 297.

[303] While a detailed discussion of how European or Asian-based corporations could do business out of Canada or Mexico to trigger NAFTA's investor state-relationship protection is beyond the scope of this article, the concept is intriguing.

[304] Thomas R. McLean, *Why Administrators Who Work in Glass Hospitals Should Not Throw Stones*, 2 AM. HEART HOSP. J. 109, 109-13 (2004).

[305] *See generally* Hagopian et al., *supra* note 70.

[306] As numerous factors will be involved in determining the balancing point of physician migration, a detailed discussion of physician immigration is beyond the scope of this article. *See generally* Blum, *supra* note 39 (discussing the impact of access to digital technology on global health); *and* McLean, *supra* note 1.

negotiations associated with international transactions that can obscure the transparency of such transactions.[307] But assuming that these legal details can be hammered out, the ethical considerations associated with the trans-border delivery of health care will still remain to be contemplated.[308]

For the most part, however, these questions are solvable problems if the economics are right. In fact, finding solutions to the legal, logistic, and ethical aspects of international telemedicine would seem to be a forgone conclusion when it is realized that: (1) capital requirements to enter the market are minimal,[309] (2) the telemedical market is already being described in terms of multi-billion dollars,[310] and (3) providing health care services in developing countries is not the equivalent to charity work.[311] Rather, providing health care services to developing countries is a big business. Given human nature and the amount of money involved, it is not likely that telemedicine will remain limited to a single country.

IV. THE FUTURE OF TELEMEDICINE

A. Views on Treaties

Accordingly, telemedicine is swiftly moving toward a fork in the road: Will providers in the United States be able to protect their domestic telemedicine markets or will the United States open its cyber-borders to international telemedical providers to lower the cost of health care and be able to provide health care to developing countries? That is to say, what is the future of telemedicine? While some have argued that the future holds an unlimited number of possibilities, game theorists have demonstrated that not all futures are equally probable.[312] To the game theorist, what the future will bring is determined by our present decisions.[313] In the U.S. telemedicine market, the present decisions revolve around issues of how best to protect the domestic market, and, to a lesser degree, allowing U.S. providers to expand into markets overseas. So, to determine the extent to which

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[307] GRIESHABER-OTTO & SINCLAIR, *supra* note 171, at 136-37.

[308] Mutchnick et al., *supra* note 178.

[309] *See supra* Part I.

[310] WHO INDIA REPORT, *supra* note 2, at 63-65.

[311] Mutchnick et al., *supra* note 178.

[312] *See generally* MORTON D. DAVIS, GAME THEORY: A NONTECHNICAL INTRODUCTION (2d ed. 1983).

[313] *See* DOUGLAS G. BAIRD ET AL., GAME THEORY AND THE LAW 1-2 (1994).

other nations will allow the United States to have it both ways, it is necessary to examine the present view of the world of telemedicine.

However, before examining these issues in detail, a word of caution is in order. While the offshoring of U.S. medical jobs will be driven by the desire to tap into a low-wage labor pool to reduce the cost of health care,[314] the ability to tap into this pool will be tempered by the patient safety movement, which seems to have a yin and yang view of telemedicine. Some patient safety advocates want to see telemedicine play an increasing roll in the U.S. domestic telemedicine market. For example, the IOM is promoting the use of disruptive technologic innovations,[315] including telemedicine,[316] to facilitate the delegation of medical services to physician extenders and to improve access to care.[317] On the other hand, concerns over patient safety have led to work-time restrictions being placed on physicians in both the European Union and, to a lesser extent, the United States.[318] Thus, to the extent that shift-working-physicians become a workplace reality, it would destroy one of the most significant reasons why medical services are currently outsourced overseas. If physicians and/or physician extenders working in shifts are able to cover the needs of the domestic market for providers between 11:00 P.M. and 7:00 A.M., the only reason to outsource domestic medical services would be money. To understand this observation, consider the rationalization of why medical services are outsourced to nighthawk and Indian providers: In America, there is a lack of qualified well-rested physicians available for consultation on the third shift (11:00 P.M.-7:00 A.M.). This creates a problem for hospitals wishing to maintain their accreditation because hospitals are obligated to have radiographic images interpreted promptly and accurately as a condition of accreditation.[319] Ac-

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[314] A detailed discussion of why health care costs need to be controlled in the United States is beyond the scope of this article. *See generally* McLean, *supra* note 1; *and* McLean, *supra* note 106.

[315] Christensen et al., *supra* note 38, at 104 (explaining why upstart companies employ disruptive innovations).

[316] *See* INST. OF MED., *supra* note 45.

[317] *See generally* INST. OF MED., CROSSING THE QUALITY CHASM: A NEW HEALTH SYSTEM FOR THE 21ST CENTURY (2001) (discussing the need to redesign the American health care system).

[318] Thomas R. McLean, *The 80-Hour Work Week: Why Safer Patient Care Will Mean More Health Care is Provided by Physician Extenders*, 26 J. LEGAL MED. 339, 343, 350, 365 (2005).

[319] *See* JCAHO, *supra* note 122, at LD 4.40 (concerning the need for hospitals to ensure that an integrated patient safety system is in place and will respond in a timely fashion to a patient's needs); 42 C.F.R. § 482.26 (2005) (concerning the need for hospitals to have standard medical care available to patients on a twenty-four/seven basis).

cordingly, because hospitals are increasingly finding it difficult to secure the services of radiologists on the third shift, hospitals have increasingly looked overseas to secure radiology services.[320] But, if in the United States, providers begin working in shifts, domestic providers would be available on the third shift so there would be no need to contract with overseas providers for these services.

1. U.S. and E.U. Views on Trade in Services

In the late twentieth century international trade treaties changed their character as they were increasingly designed less and less to protect domestic markets and labor pools.[321] In fact, in today's global economy, international trade treaties have been designed with an eye towards facilitating the offshoring of service jobs, including those in health care; thereby turning the provision of services into a tradable commodity.[322] A common assumption of these trade agreements is that labor is cheap,[323] and this is the chief asset that third-world countries bring to the table.[324] In return for this cheap labor, the United States and the European Union plan to sell state-of-the-art medical care to the developing countries, amongst other things.

Accordingly, it is of little surprise that multinational corporations in the United States and the European Union increasingly want to use the non-discrimination language of multilateral trade agreements as a means to gain "market access" through forced deregulation and privatization, especially at the state and provincial levels.[325] For example, the "progressive liberalization" and "successive rounds" clause of GATS[326] is being used not only to eliminate certain labor rights, but also to make it harder for any government to reverse the course of

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[320] Even if physicians worked in shifts, remote rural areas would probably still be unable to obtain adequate local coverage for the third shift.

[321] *See generally* Sforza, *supra* note 263.

[322] *See* Ralph Nader, *GATS*, COMMON DREAMS NEWS CTR., Sept. 20, 2002, http://www.commondreams.org/views02/0920-05.htm. *Cf.* Rebecca Buckman, *Outsourcing with a Twist: Indian Phone Giant Bharti Sends Jobs to Western Firms in Multinational Role Switch,* WALL ST. J., Jan. 18, 2005, at B1 (providing that an Indian telephone company outsourced its high-tech jobs to Germany, Sweden and Japan, thereby demonstrating that outsourcing is not a West-to-East one-way street).

[323] The concept that the government should help industries tap into cheap labor markets dates from the earliest days of America. *See* RON CHERNOW, ALEXANDER HAMILTON 376 (2004).

[324] Larry Jordan, *Labor under Siege: Worker Pay Declines, CEOs Prosper: As Inequity Widens, Employers Violate Labor Laws with Impunity, While Unions Face Uphill Battle to Reclaim their Vital Role*, MIDWEST TODAY, March 1998.

[325] Nader, *supra* note 322.

[326] GATS, *supra* note 11, art. XIX.

liberalization and return to a time when labor markets were protected.[327] Given GATS' trade liberalizing framework and the economic leverage of the United States and the European Union, it is not unreasonable to conclude that the United States and the European Union expect that developing countries will continue to make concessions in the health care and insurance sectors.[328] In short, global free-trade is a concept that is not likely to be abandoned by the United States or the European Union.

Thus, for the time being, multilateral trade agreements, like GATS and NAFTA, will continue to be the polestar for developing trade policies concerning services in the United States and the European Union. Accordingly, it is to be expected that the United States and the European Union will use the call for liberalization of trade language under GATS and NAFTA as leverage to be applied to state and provincial governments to tear down trade barriers. Conversely, if the United States and the European Union were to attempt to protect their lucrative medical markets with state licensure laws, these countries will potentially invite the imposition of costly trade sanctions, and in the case of NAFTA, arbitration awards. Consequentially, if the United States and the European Union want to stabilize their health care costs by outsourcing certain medical services to low-wage offshoring,[329] it seems unlikely that these countries will be able to allow their state and/or provincial governments to dictate health and insurance regulations much longer.

2. India[330]

Moreover, in a world of global trade, it seems unlikely that less economically developed countries will continue to allow the United States and the European Union to expand into their health care market without a reciprocal grant of access to the lucrative health care markets in the United States and Europe. Many developing countries, of

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[327] GRIESHABER-OTTO & SINCLAIR, *supra* note 171, at 8. With respect to medicine, because many of the rights of providers are defined in state law, these rights could vanish under GATS if not placed into federal law.

[328] Lipson, *supra* note 203, at 6-7.

[329] The need to control health care costs, however, is not limited to the United States and the European Union. Even developing countries, which have spent as little as 2.9-6.9 percent of their GDP on health care, are trying to cut health care costs to make their health care systems more fiscally sustainable. *See* Jolita Butkeviciene et al., *Services Performance in Developing Countries: Elements of the Assessment* 12 (WTO Symposium on Assessment of Trade in Services, March 14, 2002), http://www.wto.org/english/tratop_e/serv_e/symp_mar02_unctad_e.doc.

[330] *See* Chanda, *supra* note 60, at 41-49.

which India is perhaps the best example, view the health care markets in developed nations as potential revenue streams that can be used to grow their own economies. After all, it is estimated that the global demand for e-health services is $1.25 trillion and most of that revenue is, at present, flowing out of developed countries.[331] Moreover, because of the absence of reliable data for this market,[332] many commentators believe this figure for the size of the e-health market to be conservative.[333] Accordingly, even if a developing country can only secure a small piece of the commerce in e-health with a modest investment in a VPN and some telemedical software, that developing country could be substantially enriched. And if a developing country can use telemedicine to tap into the revenue streams associated with the health care markets in the developed countries, the developing countries stand to increase their overall prosperity because of better employment.[334] Such a lure of prosperity is likely to be irresistible by the developing world.

In fact, perhaps no other country stands to gain as much from global telemedicine as India. With its large contingent of English-speaking people and a solid engineering infrastructure, India is poised to move into the telemedicine marketplace in a substantial way. [335] With its foot already in the U.S. domestic health care market, India telemedicine providers are likely to continue to gain market share in the United States because their business model is the most cost-competitive.[336] A recent position paper completed for the Indian government, moreover, suggests that India has no interest in providing telemedical services under the more cost-efficient nighthawk model.[337] As Indian companies and providers increasingly gain market share in the developed world's health care marketplace, countries like the United States and the European Union will increasingly have to rethink their schemes for health care delivery systems and the means of protecting their health care markets.

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[331] *Id.* at 5-6.

[332] *Id.* at 12.

[333] *Id.* at 13. *See* Yeo, *supra* note 60 (stating that although there are no reliable figures of health services exports, the United States is almost certainly the largest exporter).

[334] Butkeviciene et al., *supra* note 329, at 12.

[335] *See* Chanda, *supra* note 115, at 48.

[336] *See supra* Part I.B. & C.

[337] *Cf.* Chanda, *supra* note 60, at 44-49 (nothing in Ms. Chanda's working paper suggests that Indian providers wish to compete on anything other than price, therefore, an inference may be drawn that Indian providers are not willing to use the nighthawk model).

3. Canada[338]

The potential impact of remote providers invading a domestic health care market appears to most acute in Canada.[339] With its health care system under financial strain,[340] Canada, of late, seems yearly to undertake a comprehensive review of its health care sector, including telemedicine.[341] In addition, the two most recent Canadian studies on their health delivery systems have contemplated the impact of multilateral trade-in-services agreements on the Canadian health care system. In the Romanow report, however, the Canadians only peripherally dealt with the issues of GATS and NAFTA.[342] Yet, in releasing *Bad Medicine* the following year, the Canadians became the first country to systematically analyze the potential impact of multilateral trade agreements on its domestic health care market. This report leaves little doubt, absent substantial amendments, that the Canadians view GATS and NAFTA as a significant challenge for any country wishing to develop its own comprehensive national health care policy in a global environment.[343]

B. National Licensure

National licensure is an idea whose time has come. The existing state and provincial licensure system creates a regulatory matrix that inhibits countries, like the United States, from adopting the uniform best-practices of medicine.[344] Adoption of a national licensure system,

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[338] *See generally* GRIESHABER-OTTO & SINCLAIR, *supra* note 171 (discussing the debate over the future of telemedicine in Canada).

[339] Blum, *supra* note 39.

[340] *Id.*

[341] *See, e.g.*, GRIESHABER-OTTO & SINCLAIR, *supra* note 171.

[342] *See generally* GRIESHABER-OTTO & SINCLAIR, *supra* note 171, at 69-90 (providing an overview of the Romanow Report).

[343] *Id.* at 99. *Bad Medicine*'s focus is unique amongst publications that contemplate the impact of multilateral trade agreements on health care. Most other reports on this subject take a macroeconomic view, i.e., they contemplate the impact of multilateral trade agreements on the entire health care sector. *Bad Medicine*, in contrast, which examines the impact of GATS and NAFTA on individual transactions, has a more microeconomic flavor. For example, *Bad Medicine* observes that GATS and NAFTA have the distinct possibility of frustrating the Canadian government's planned reforms of its public-sector health insurance monopoly, especially with respect to who regulates the services that can be provided and on what terms. *Id.* at 21. But the bottom line of *Bad Medicine* is straight forward: compliance with multilateral trade agreements spells the end of provincial (or state) licensure of medicine and the regulation of insurance.

[344] INST. OF MED., LEADERSHIP BY EXAMPLE: COORDINATING GOVERNMENT ROLES IN IMPROVING HEALTH CARE QUALITY 82 (2002) (stating that state licensure

something that is advocated by the IOM,[345] would also facilitate another goal of the patient safety movement: the increased use of telemedicine in the domestic health care marketplace[346] because, like a national pilots' licensure system, a national medical license simplifies transactions and standardizes expectations.[347]

Yet, for America, a perceived downside of a national medical licensure system is that it will facilitate the influx of low-wage foreign telemedicine providers into the U.S. health care market, thereby stimulating competition for services, and ultimately allowing the foreign providers to take the jobs of domestic providers. Because a national medical licensure system would eliminate state-law based trade barriers, this is a legitimate concern; for just as with pilots, a national license opened the country such that licensed foreign pilots can land anywhere in America, so too will a national medical license allow foreign providers access to treat patients anywhere in the United States.[348] Further, because existing multilateral trade treaties dictate that any national licensure acts must be the least restrictive to protect the country's legitimate interests,[349] a national medical license could not be a substitute for state-law based trade barriers, as a protective trade barrier for providers, as was done in the past by Australia.[350]

But while American providers may yearn for the protective markets of yesterday, in the field of health care the United States is already falling behind the rest of the world on national and international licensure. For example, because New Zealand considers physicians from the United Kingdom, Australia, and Canada to have equivalent training, physicians from these countries may automatically work in New Zealand if they have an unrestricted license in their home coun-

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creates a floor for medical quality, not a definition for best practice); INST. OF MED., *supra* note 48, at 135-51 (discussing the heterogeneous practices that arise from a system of state medical licensure).

[345] *See* INST. OF MED., *supra* note 48.

[346] *See* INST. OF MED., *supra* note 45, at 8.

[347] A detailed discussion of national pilot licensure is beyond the scope of this article, but see *supra* note 120.

[348] *See* Fed. Aviation Admin., Flight Standards Service: How Do I Become a Pilot: Frequently Asked Questions (FAQ), http://www.faa.gov/AVR/afs/pilotfaq.htm (last visited Mar. 20, 2006); Ross Oliver, How to Become an Airline Pilot, http://www.airaffair.com/Library/start-airplanes.html (last visited Mar. 20, 2006); SoYouWanna Get a Pilot's License, http://www.soyouwanna.com/site/syws/pilot/pilot.html (last visited Mar. 20, 2006).

[349] *See supra* Part III.C.

[350] *See* Australian Competition and Consumer Comm'n, ACCC Proposes Surgical College Reform to Help Address Surgeons Shortage (Feb. 6, 2003), http://www.accc.gov.au/content/index.phtml/itemId/88308.

try.[351] So if America wants to be a member of a global trading community, how much longer will it be able to retain its system of state medical licensure, which acts as a domestic trade barrier that protects its domestic health care market?

C. A National Medical Malpractice Market?

A final comment on medical malpractice coverage is needed. Once a national medical licensure system is in place, the need for fifty independent medical malpractice markets, regulated by states, will seem like an antiquated idea. A national malpractice system,[352] like a national licensure system, would be reasonably expected to decrease the cost of health care transactions.[353] In fact, the elimination of transaction costs associated with health and pension plans was a significant reason behind the enactment of ERISA.[354] To minimize transaction costs for the health and pension plans, Congress preempted all state-law related to ERISA plans.[355] Moreover, absent a uniform system of medical malpractice coverage, the IOM's recommendation that telemedicine be increasingly utilized could be stymied if providers had to add in the costs of compliance with multiple state malpractice codes. So, perhaps Congress should create a national medical malpractice act that preempts all state-related law concerning medical misadventures.[356]

But any shift to a national medical malpractice coverage system must also contemplate the impact of multilateral trade agreements. Given that the U.S. insurers benefit from market expansion under Mode 3, it is unlikely the rest of the world will look favorably on any attempt by the United States to consolidate its medical malpractice market under the cachet of an indispensable government service.[357]

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[351] Med. Counsel of N.Z., Policy on Registration in New Zealand (May 2004), http://www.mcnz.org.nz/Default.aspx?tabid=983.

[352] This discussion is not to suggest that there will be a single malpractice provider for the entire nation. That is unlikely because large health care provider organizations often find self-insurance through a wholly owned subsidiary to be cost-effective. *See* Rosemary M. McAndrew, *Captives: Here to Stay*, BUS. F. ONLINE (2003), http://www.businessforum.com/RMM_01.html. Known as captive insurance companies, this form of insurance may become more popular as the health care market consolidates. However, a detailed discussion of captive insurers is beyond the scope of this article.

[353] *See* INST. OF MED., *supra* note 48.

[354] *See* Richards & McLean, *supra* note 99, at 461.

[355] 29 U.S.C. § 1144 (2005).

[356] Such a law is not that far fetched. *See* HEALTH Act of 2005, S. 354, 109th Cong. § 11(b) (2005) (enacted).

[357] *See* GATS, *supra* note 11, art. I.3.

But, as we have seen, allowing foreign medical malpractice carriers into a U.S. domestic market could disrupt the construct of appropriate medical malpractice risk pools. So who is going to be excluded from the market and on what ground(s)? Because the devil is in the details, while medical malpractice market consolidation may offer certain economic efficiencies, in a world of global trade, perhaps it is not the ideal paradigm.

For international telemedicine, an interesting malpractice coverage paradigm shift—and one that would avoid insurance pool construction problems—would be to provide medical malpractice coverage in a fashion analogous to maritime shipping insurance. While this article is not intended to be a primer on maritime insurance, the basic principle of underwriting of maritime insurance coverage is to predicate that coverage on an individual ship's seaworthiness and an individual's experience.[358] Thus, as envisioned here, international telemedical operations could be insured based on the individual "medical" worthiness of telemedical system—based on its hardware, software and security—, and the patient safety track record of the system's owners. Finally, if a maritime-like insurance coverage system were adopted for international telemedicine, it would have aesthetic appeal if jurisdiction in telemedicine was determined by the nationality of the provider in a manner analogous to the law of the sea.[359]

D. Medical Sweat Shops?

Lurking in the back of this article is the notion that multilateral trade agreements will ultimately impact the health care market, both in the United States and abroad. Implicit in this notion is the assumption that multilateral trade-in-services agreements will continue to be the guide posts to global commerce. But is this assumption well-grounded? Certainly, this assumption can potentially be overturned as borderless e-commerce-in-services conducted under multilateral trade-in-services agreements may become stymied at several points by the self interests of a handful of nations.[360] Still, as long as the United States encourages free trade,[361] this assumption will

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[358] *See generally* Underwriters at Lloyd's v. Labarca, 260 F.3d 3, 7 (1st Cir. 2001).

[359] *See supra* Part II.B.4.

[360] Kristi L. Bergemann, Comment, *A Digital Free Trade Zone and Necessarily-Regulated Self-Governance for Electronic Commerce: The World Trade Organization, International Law, and Classical Liberalism in Cyberspace*, 20 J. MARSHALL J. COMPUTER & INFO. L. 595, 601 (2002).

[361] The United States will continue to encourage free trade by promoting

remain valid. Moreover, because of the sheer volume of commerce that can be conducted under multilateral trade-in-services agreements, some commentators have observed that global trade tends to diminish the volatility in the stock market[362] and can be used as a vehicle for the expansion of corporate America overseas.[363] Given these additional beneficial effects of multilateral trade agreements, the assumption that they will continue to be guides of U.S. policies for globalization seems secure.

Accordingly, America's health care market is going to need to grow increasingly comfortable with the principles of multilateral trade agreements. This in turn means that America must grow comfortable with the offshoring of health care jobs to low-wage Indian telemedical providers as a method to control rising health care costs. After all, this is the same cost-cutting strategy corporate America employed to control rising blue-collar labor costs in the 1970s and rising white-collar labor costs in the 1990s.[364] And just as offshore manufacturing sweatshops began in the late 1970s, and call center style sweatshops began to appear in the late 1990s, the stage appears to be set to offshore "medical sweat shops."

"Sweatshop," a term that originated more than 150 years ago, is a form of labor abuse "in which workers are employed for long hours at low wages and under unhealthy conditions."[365] If we offshore sufficient medical jobs to India, it seems likely for several reasons that Indian telemedical providers may organize their physician labor force into sweatshop-style operations. First, working and living conditions in India are far below the conditions that U.S. workers take for granted,[366] and while wages have improved modestly in recent years, Indian physicians yearn for improved reimbursement.[367] How poorly physicians are paid in India is difficult to calculate because accurate estimates of the number of hours worked by physicians in India are not available.[368] Yet, because Indian society seems to have even less

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debate and recommending that WTO member countries continue the common practice of not imposing customs duties on imported electronic transmissions. *Id.* at 603.

[362] ROBERT J. SHILLER, IRRATIONAL EXUBERANCE 118-19 (2d ed. 2005).

[363] *See supra* Part III.

[364] McLean, *supra* note 1, at 205-06.

[365] WEBSTER'S NEW COLLEGIATE DICTIONARY 1176 (1973).

[366] *See* Srobona Roy Choudhury, *A Struggle in Bangalore*, FRONTLINE, Mar. 2-15, 2002, http://www.frontlineonnet.com/fl1905/19050380.htm.

[367] Yash Lokhandwala, *Doctors on Strike: A Legitimate Last Option*, 2 INDIAN J. MED. ETHICS (2005), *available at* http://www.issuesinmedicalethics.org/131ed002.html.

[368] Indian institutional telemedical providers are prepared to provide service on a twenty-four/seven basis. *See AHF Reaches Out to Remote Areas through Tele-*

respect for its physicians than American society,[369] it is probably fair to say that Indian physicians are not only paid substantially less, but they must work under far less ideal conditions than their American counterparts. Second, India as a nation very much wants to enter the U.S. health care market so that it can tap into the telemedical revenue "river." After all, India views its present share of the U.S. health care market as just being the "tip of the [e-health] ice-burg [sic]."[370] Accordingly, given its low-wage physician labor pool and the potential monetary awards for the country as a whole, it is not hard to imagine a room somewhere in India where a number of Indian physicians are positioned in front of telemedicine monitors working just as a call center would work, i.e., a sweatshop.

CONCLUSION

Today, developed countries, like the United States, are looking to export their financial institutions and simultaneously reduce the cost of their health care systems. To the extent that a developed country can protect its domestic markets at home with trade barriers, so much the better. Unfortunately, such goals are more or less mutually exclusive, and something has to give. For the United States, the likely *quid pro quo* for allowing its financial institutions to expand into developing countries will be that the United States is going to have to open its health care markets to low-wage providers in developing countries. Thus, as we progress through the twenty-first century, America is likely to increasingly purchase more of its routine health care services from remote cost-effective providers over the Internet via relatively cheap VPNs and related software. Possibly, these telemedicine operations will have the look and feel of today's offshore call centers because of the competition amongst developing countries to gain a larger share of the U.S. health care market.

Such an outlook is not a surprise to many of the major medical organizations, like the ACR. These organizations are currently seeing many of the jobs of their constituents moving overseas just as blue-collar jobs were outsourced a generation ago. Accordingly, many medical organizations want to erect trade barriers in the form of state licensure laws and malpractice coverage requirements to protect do-

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cardiology, EXPRESS HEALTHCARE MGMT., June 1-15, 2004, http://www.expresshealthcaremgmt.com/20040615/technology01.shtml.

[369] Jyoti Taskar, *Doctors Under Siege*, 2 INDIAN J. MED. ETHICS (2005), *available at* http://www.issuesinmedicalethics.org/114cv109.html (discussing how Indian physicians are frequently victims of patient assaults).

[370] WHO INDIA REPORT, *supra* note 2, at 63.

mestic providers from foreign competition. To the extent that these trade barriers temporarily shield domestic providers from competitions while a more durable long-term solution is worked out, trade barriers are a good idea.[371] On the other hand, if medical organizations believe that trade barriers can shield their constituents from competition indefinitely, these beliefs are misplaced.

In literature, Dr. Faust hoped that the devil would not return to collect on a debt, but the devil did return. Similarly, while U.S. physicians and hospitals can hope that remote low-wage providers can be placed at bay with trade barriers, remote providers armed with cheap telecommunication devices and multilateral trade agreements will ultimately break down the trade barriers that now keep them out of the U.S. health care market. And while there are several collateral reasons why trade barriers will not protect the medical profession for much longer,[372] the primary reason is that the growth of the U.S. economy is dependant on global expansion under the banner for free trade. Accordingly, U.S. economic policy needs to comply with the dictates of the multilateral free trade agreements, like GATS and NAFTA. Yet, these agreements call for the progressive removal of trade barriers so as to promote two-way trade-in-services between developed and developing countries. Thus, absent a de-emphasis on global free trade or a substantial change in America's health care system, such as physicians working in shifts, it seems likely that America's ability to protect the livelihood of its medical providers with trade barriers is limited. The bottom line is that if American providers want to avoid the fate of Dr. Faust, to retain their jobs, American providers, paradoxically, should invest in a strategy of evermore efficient and sophisticated telemedicine so as to keep the technologic barrier to telemedicine high.[373]

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[371] McLean, *supra* note 1, at 263-64. For example, the United States could work to raise the technologic barrier to enter the telemedical market or, alternatively, the United States could work towards lowering the costs associated with providing medical services. *Id.*

[372] For example, the patient safety movement's push for national licensure is based on factors that are independent of international trade-in-services.

[373] *See* COASE, *supra* note 63.