

Legislating for a New Age in Medicine: Defining the Telemedicine Standard of Care to Improve Healthcare in Iowa

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ABSTRACT: Telemedicine (also referred to as telehealth or e-health) is the use of technology to connect patients and healthcare providers from a distance, and it allows for accessible, efficient, cost-effective, and convenient healthcare. Most states, including Iowa, have not updated their laws to account for the rapid emergence of telemedicine. This leaves healthcare providers uncertain of the legal implications of using telemedicine and thus discourages its use for fear of malpractice liability. Iowa should define the standard of care for telemedicine while balancing two public policy concerns. First, it should seek to maximize the potential benefits of telemedicine, including its accessibility, efficiency, cost-effectiveness, and convenience. Second, it should seek to minimize the risks associated with telemedicine, most notably the risk of misdiagnosis when a patient forgoes an in-person examination by a physician. In legislating for this new age in medicine, Iowa should follow the approach of Hawaii and adopt a standard of care that recognizes the diagnostic disadvantage associated with telemedicine but affirms liability for physicians that fail to comply with regulatory guidelines.

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I. INTRODUCTION

Imagine a child in rural Iowa with an earache who, like many other Iowans,¹ lives in an area where it is difficult to access healthcare.² Traditionally, this child may need to travel a great distance—causing her to miss school and requiring her parent or guardian to take time away from work—to seek care from a physician. Technology advances, however, have provided an alternative means for this child to receive medical attention for her earache in a fast, convenient, and inexpensive manner: telemedicine. Telemedicine (also referred to as telehealth or e-health) is the use of technology to connect patients and healthcare providers from a distance.³ With the use of telemedicine, this child may simply visit her school nurse and instantly connect with a specialist located hundreds or thousands of miles away.⁴ Through videoconferencing technology, “[t]he doctor can see in the ear, diagnose an ear infection, call the pharmacy locally, and then the pharmacy delivers the medicine.”⁵

While research and development have broken down technological and geographic barriers,⁶ making telemedicine a viable medium for healthcare delivery,⁷ there remain legal impediments—perhaps more accurately characterized as legal uncertainties—that leave healthcare providers without guidance on how to properly use this new technology and thus inhibit the expansion of telemedicine.⁸ If the physician who treats that child is located in Wisconsin, does the physician need to be licensed to practice medicine in Iowa?⁹ Assuming that the child has health insurance, will it pay for the care

1. In 2010, the U.S. Census Bureau found that 35.98% of Iowans lived in rural areas. State Data Ctr. of Iowa, *Iowa Quick Facts*, IOWA.GOV, <http://www.iowadatecenter.org/quickfacts> (last modified Jan. 30, 2013, 2:42 PM).

2. A recent study found that one-fifth of Americans live in areas where primary care physicians are scarce. Milt Freudenheim, *The Doctor Will See You Now. Please Log On.*, N.Y. TIMES (May 29, 2010), <http://www.nytimes.com/2010/05/30/business/3otelemed.html>. Providers are historically reluctant to branch out into rural areas because doing so is simply not profitable or financially sustainable. See *Rural Health Care*, AM. HOSP. ASS'N, <http://www.aha.org/advocacy-issues/rural/index.shtml> (last visited Nov. 17, 2013).

3. ALAN S. GOLDBERG & JOCELYN F. GORDON, *TELEMEDICINE: EMERGING LEGAL ISSUES* 1 (2d ed. 1999). This Note provides more thorough definitions of telemedicine in Part II.A.

4. Ryan Flinn, *The Doctor Will Skype You Now*, BLOOMBERG BUSINESSWEEK (Aug. 23, 2012), <http://www.businessweek.com/articles/2012-08-23/the-doctor-will-skype-you-now>.

5. *Id.* (quoting Jeffrey Kesler, Chief Operations Officer, Ga. P'ship for TeleHealth) (internal quotation marks omitted).

6. WORLD HEALTH ORG., *TELEMEDICINE: OPPORTUNITIES AND DEVELOPMENTS IN MEMBER STATES* 6 (2010), available at http://www.who.int/goe/publications/goe_telemedicine_2010.pdf.

7. See *infra* Part III.D.2.a.

8. Paul Spradley, Note, *Telemedicine: The Law Is the Limit*, 14 TUL. J. TECH. & INTELL. PROP. 307, 316–30 (2011) (exploring the legal impediments to further advances in telemedicine).

9. Iowa, along with many other states, has answered this question: doctors must obtain an Iowa medical license to practice telemedicine on Iowa patients. FED'N OF STATE MED. BDS., *TELEMEDICINE OVERVIEW: BOARD-BY-BOARD APPROACH* 5 (2012), available at <http://www.fsmb>.

she received via telemedicine?¹⁰ What risks associated with telemedicine does the physician need to disclose to the patient—or the child’s guardian in this example—before treating her?¹¹

This Note argues that the overarching and most consequential telemedicine legal inquiry centers on malpractice liability and the underlying standard of care.¹² The uncertainty surrounding telemedicine malpractice law and the underlying standard of care creates a problem for healthcare providers who wish to implement telemedical solutions.¹³ Although there are other facets to potential telemedicine malpractice claims,¹⁴ the associated standard of care is crucial to all such claims, and the

org/pdf/grpol_telemedicine_licensure.pdf. Ten states have created special licenses that allow out-of-state doctors to practice telemedicine within their states without a full medical license. *Id.* at 1. For an in-depth discussion of telemedicine licensure issues and examples of licensure statutes, see THOMAS WM. MAYO & TARA E. KEPLER, *TELEMEDICINE: SURVEY AND ANALYSIS OF FEDERAL AND STATE LAWS* 9–59 (2007).

10. While it seems illogical for health insurers to object to the use of telemedicine, given its tendency to reduce costs, reimbursement for telemedical care has become a barrier, as some insurers have deemed telemedical care not “medically necessary and appropriate.” MAYO & KEPLER, *supra* note 9, at 60 (internal quotation marks omitted); see also *id.* at 60–116 (discussing reimbursement issues and providing extensive statutory examples).

11. See GOLDBERG & GORDON, *supra* note 3, at 26–27. Informed consent is traditionally a separate legal issue from malpractice and was typically analyzed under battery law. MARK A. HALL ET AL., *HEALTH CARE LAW AND ETHICS IN A NUTSHELL* 126 (3d ed. 2011). Modern informed consent law more closely mirrors negligence claims, but informed consent remains a separate cause of action. *Id.* In order for providers to comply with informed consent requirements, it is generally agreed upon that patients should be advised of the risks of telemedicine before they accept it as a means of treatment. Virginia Rowthorn & Diane Hoffmann, *Legal Impediments to the Diffusion of Telemedicine*, 14 J. HEALTH CARE L. & POL’Y 1, 35–36 (2011).

12. It is generally accepted that malpractice litigation does not add substantially to the cost of healthcare in the United States. See Catherine Arnst, *The Truth About Malpractice Lawsuits*, BLOOMBERG BUSINESSWEEK (Sept. 16, 2009), http://www.businessweek.com/magazine/content/09_39/b4148030880703.htm. However, this does not mean that malpractice concerns do not influence healthcare providers’ decisions of whether or not to participate in a given industry. See also Rowthorn & Hoffmann, *supra* note 11, at 5.

13. CHRISTA M. NATOLI, CTR. FOR TELEHEALTH & E-HEALTH LAW, SUMMARY OF FINDINGS: MALPRACTICE AND TELEMEDICINE 1–3 (2009), available at <http://www.ctel.org/research/Summary%20of%20Findings%20Malpractice%20and%20Telemedicine.pdf> (“Recent advances in medicine and technology have transformed the way in which patients access health care services. Unfortunately, these same medical advances also pose new complications for traditional medical malpractice claims, such as jurisdictional and procedural issues and duty of care concerns.”); see also Rowthorn & Hoffmann, *supra* note 11, at 5.

14. Jurisdictional concerns are present with regard to telemedicine malpractice due to its tendency to involve interstate treatment. GOLDBERG & GORDON, *supra* note 3, at 21–23. If the child’s guardian in Iowa sues the physician in Wisconsin, in which state did the care take place? The answer to this question is unknown. See *id.* In a related concern, most medical malpractice insurance policies only cover care provided by the insured within the state he or she is licensed to practice medicine. *Medical Malpractice and Liability*, TELEHEALTH RESOURCE CENTERS, <http://www.telehealthresourcecenter.org/toolbox-module/medical-malpractice-and-liability> (last visited Nov. 17, 2013). It is possible that providers need to obtain additional malpractice insurance in order to cover their telemedicine practice. *Id.* Furthermore, vicarious and institutional liability

uncertainty of this standard presents a significant barrier to the expansion of telemedicine.¹⁵ There is no explicit guidance on the telemedicine standard of care in Iowa,¹⁶ but it will almost certainly become an issue in coming years¹⁷ given the rapid expansion and vast potential of the telemedical industry.¹⁸

This Note seeks to find the proper balance between maximizing the benefits of telemedicine and minimizing its risks.¹⁹ Delineating a thorough standard of care for telemedicine would eliminate uncertainty for healthcare providers and allow them to expand the proper use of telemedicine within Iowa. Part II presents a background of traditional medical malpractice law and highlights uncertainty that results when traditional medical malpractice principles are applied to telemedicine. Part III analyzes the variables that make up the standard of care for telemedicine and assesses the relative strengths and weaknesses of the varying options. Part IV concludes that Iowa should adopt a reasonable-physician standard, disavow the locality rule, and apply a lower standard of care to telemedical care that falls within the limitations and definitional bounds set by the legislature.

II. BACKGROUND

Great uncertainty surrounds telemedicine malpractice issues. Subpart II.A provides a detailed definition of telemedicine and a closely related but distinct field, cybermedicine. Subpart II.B outlines traditional medical

could become a factor in telemedicine liability litigation. GOLDBERG & GORDON, *supra* note 3, at 23–25. However, the potential liability of any single player within the healthcare delivery system serves as a disincentive for the use of telemedicine; thus, for the analysis in this Note, it is not of significance whether the hospital or the doctor would end up as the primary liable party for telemedicine care. Finally, there may be liability associated with technology failures. Patricia C. Kuzler, *Telemedicine and Integrated Health Care Delivery: Compounding Malpractice Liability*, 25 AM. J.L. & MED. 297, 317–18 (1999). This makes it essential that physicians become knowledgeable and skilled with the technology associated with telemedicine. *See id.*

15. LYNN D. FLEISHER & JAMES C. DECHENE, *TELEMEDICINE AND E-HEALTH LAW* § 1.04[3][b][i] (2010) (“[I]f the physician utilizes new telemedicine technology, a patient that suffers a poor outcome might allege that the physician negligently utilized the new technology in place of customary practices (e.g., a ‘hands-on’ evaluation). Specifically, for example, the patient might claim that he suffered injury because the remote consult prevented the teleconsulting physician from diagnosing a condition that would have been detected during a face-to-face encounter.”); *see also* Rowthorn & Hoffmann, *supra* note 11, at 34.

16. *See* NATOLI, *supra* note 13, at 1; Rowthorn & Hoffmann, *supra* note 11, at 32.

17. *See* GOLDBERG & GORDON, *supra* note 3, at 20–21; Rowthorn & Hoffmann, *supra* note 11, at 32 (“Although there are few legal cases involving telemedicine, there is a widespread assumption that telemedicine may pose new complications to traditional medical malpractice claims As the use of telemedicine grows, malpractice claims relating to telemedicine services may increase and, if so, these complications are likely to create a new body of law.”).

18. *See* MAYO & KEPLER, *supra* note 9, at 1–2.

19. Much of the analysis in this Note is original. Because it is largely based on logic and reason, citations to similar scholarship are often not possible.

malpractice law. Finally, Subpart II.C illustrates the uncertainty that arises when courts apply traditional medical malpractice law to telemedicine.

A. *TELEMEDICINE DEFINED*

Although the term “telemedicine” has been around since the 1970s, it does not have a consensus definition.²⁰ This Subpart offers examples of definitions and discusses the critical distinction between telemedicine and a separate (but closely related) field, cybermedicine. Most importantly, this Subpart explains that, given the disputed and unclear definition of telemedicine, legislatures must clearly define what practices fall within the bounds of any legislation establishing a telemedicine standard of care.

The World Health Organization defines telemedicine as:

The delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, [and] research and evaluation, . . . all in the interests of advancing the health of individuals and their communities.²¹

Telemedicine is also commonly referred to as either telehealth or e-health.²² Telemedicine allows physicians to use technology to interact with patients and other physicians from a distance, often as a substitute for face-to-face interaction.²³

In defining telemedicine, it is essential for legislation to identify not only what telemedicine *is*, but what telemedicine *is not*. Telemedicine differs from cybermedicine, even though the two fields are commonly confused and comingled.²⁴ Cybermedicine involves a global exchange of medical

20. WORLD HEALTH ORG., *supra* note 6, at 8–9.

21. *Id.* at 9 (quoting WORLD HEALTH ORG., A HEALTH TELEMATICS POLICY IN SUPPORT OF WHO'S HEALTH-FOR-ALL STRATEGY FOR GLOBAL HEALTH DEVELOPMENT 10 (1998), available at http://apps.who.int/iris/bitstream/10665/63857/1/WHO_DGO_98.1.pdf) (internal quotation marks omitted). For other definitions of telemedicine, see *For the Media*, AM. TELEMEDICINE ASS'N, <http://www.americantelemed.org/about-ata/for-the-media> (last visited Nov. 17, 2013) (defining telemedicine as “the delivery of any healthcare service or transmission of wellness information using telecommunications technology”); FREDDY LYKKE ET AL., COMPUTER SCIS. CORP., TELEMEDICINE: AN ESSENTIAL TECHNOLOGY FOR REFORMED HEALTHCARE 3 (2013), available at http://assets1.csc.com/health_services/downloads/CSC_Telemedicine_An_Essential_Technology_for_Reformed_Healthcare.pdf (defining “three common critical elements for a technology to be classified as telemedicine: 1) Provision of healthcare services[.] 2) Delivery via Information and Communications Technology (ICT)[.] and 3) Supporting a goal of overcoming geographical separation of patient and/or provider(s)”).

22. See *For the Media*, *supra* note 21.

23. Rowthorn & Hoffmann, *supra* note 11, at 3. An example of telemedicine was discussed in the Introduction, with a doctor hundreds of miles away able to interact with a child via video chat, see into her ear, and diagnose an ear infection. See *supra* Part I.

24. Carmen E. Lewis, Comment, *My Computer, My Doctor: A Constitutional Call for Federal Regulation of Cybermedicine*, 32 AM. J.L. & MED. 585, 585–86 (2006). For a criticism of the

information, often readily accessible on the Internet, and, unlike telemedicine, it is without extensive individual interaction between patients and physicians.²⁵ A common example of cybermedicine is when a physician prescribes medication to a patient who merely fills out an online questionnaire and has no further interaction with the physician.²⁶

Given the uncertainty surrounding telemedicine malpractice liability and the underlying standard of care, this Note first looks to traditional medical malpractice law for guidance. The next Subpart outlines traditional medical malpractice standards with a focus on the state of medical malpractice law in Iowa.

B. TRADITIONAL MALPRACTICE LAW

Medical malpractice claims mirror traditional negligence claims; they involve: (1) a duty owed by the physician to the patient; (2) a breach of that duty by the physician; (3) an injury to the patient; and (4) a causal link between the physician's breach of duty and the patient's injury.²⁷ Malpractice law dictates that a physician's duty exists if there is a patient-physician relationship.²⁸ Once a patient-physician relationship exists and the physician owes a duty to the patient, its nature must be determined. Under medical malpractice law, the applicable standard of care defines that duty.²⁹ Two variables determine the traditional standard of care within a given jurisdiction: (1) the means of comparison between the conduct of the defendant-physician and other physicians, and (2) the pool of physicians that the defendant-physician is compared to.³⁰ These variables can be outcome determinative in any given medical malpractice case.

effectiveness of cybermedicine and an analysis of cybermedicine malpractice issues, see Ruth Ellen Smalley, Comment, *Will a Lawsuit a Day Keep the Cyberdocs Away?: Modern Theories of Medical Malpractice as Applied to Cybermedicine*, 7 RICH. J.L. & TECH. 29 (2001), available at <http://jolt.richmond.edu/v7i3/article3.html>.

25. Lewis, *supra* note 24, at 586. Experts estimate that “[m]ore than 25% of the Internet’s content is based on health care and medical information.” *Id.* at 587.

26. See, e.g., Julie Reed, Note, *Cybermedicine: Defying and Redefining Patient Standards of Care*, 37 IND. L. REV. 845, 854-55 (2004).

27. Phyllis Forrester Granade, *Medical Malpractice Issues Related to the Use of Telemedicine—An Analysis of the Ways in Which Telecommunications Affects the Principles of Medical Malpractice*, 73 N.D. L. REV. 65, 65-66 (1997).

28. *Id.* at 66. It is generally clear when a patient-physician relationship exists: “A patient seeks care, and the physician provides the care.” MARK A. HALL ET AL., HEALTH CARE LAW AND ETHICS 146 (7th ed. 2007). A patient-physician relationship exists if a physician has offered any form of medical advice to the physician’s patient. *Adams v. Via Christi Reg’l Med. Ctr.*, 19 P.3d 132, 140 (Kan. 2001).

29. Granade, *supra* note 27, at 74.

30. See *id.* at 74-75.

First, under the means of comparison variable, jurisdictions are divided between the custom-based standard and the reasonable-physician standard.³¹ Traditionally, courts applied the custom-based standard, which compares the defendant-physician's actions to medical custom.³² Under this standard, the fact finder "determine[s] whether the defendant has complied with the industry norms."³³ However, many states have moved away from the custom-based standard and adopted the reasonable-physician standard.³⁴ The reasonable-physician standard requires the fact finder to determine if a reasonable physician would have followed the defendant-physician's course of action in the same or similar circumstances.³⁵

The second variable determines the pool of physicians that the fact finder compares against a defendant-physician's conduct.³⁶ This determination turns on the presence (or absence) and the nature of a "locality rule" in a given jurisdiction.³⁷

The locality rule, in jurisdictions where it is used,

31. Philip G. Peters, Jr., *The Role of the Jury in Modern Malpractice Law*, 87 IOWA L. REV. 909, 912-17 (2002).

32. *Id.* at 913. Commentators criticize the custom-based standard for effectively allowing "physicians the power to set their own standard of care." *Id.* at 912. As the Wyoming Supreme Court has stated, negligence "cannot be excused on the grounds that others practice the same kind of negligence." *Id.* at 917 (quoting *Vassos v. Roussalis*, 625 P.2d 768, 772 (Wyo. 1981)) (internal quotation marks omitted). Moreover, this standard discourages innovation in medical treatment. *See* HALL ET AL., *supra* note 28, at 324. If a physician is compared strictly to custom, then new alternative treatment methods necessarily fall outside the scope of the accepted standard of care. *See id.* However, liability for such experimental care is "often avoided by resorting to informed consent law." *Id.* at 325.

33. Peters, *supra* note 31, at 913. In making this determination, courts have recognized a "two schools" doctrine that often appears in jury instructions. *See, e.g., Jones v. Chidester*, 610 A.2d 964, 965-66 (Pa. 1992) ("A medical practitioner has an absolute defense to a claim of negligence when it is determined that the prescribed treatment or procedure has been approved by one group of medical experts even though an alternate school of thought recommends another approach, or it is agreed among experts that alternative treatments and practices are acceptable."). Furthermore, some jurisdictions take a quantitative approach to the "two schools" doctrine (considers whether a "considerable number" of physicians use the treatment in question), while others use a qualitative approach (considers whether "respective, reputable and reasonable" physicians use the treatment in question). *Id.* at 965, 967-68 (internal quotation marks omitted).

34. Peters, *supra* note 31, at 913-17. As of 2001, eleven states and the District of Columbia had expressly rejected the custom-based standard and nine more had endorsed the reasonable-physician standard without expressly rejecting the custom-based standard. *Id.* at 914-15. In part, the custom-based standard has lost favor because it is not an effective means to evaluate emerging treatment techniques, given that new forms of treatment are necessarily not customary. *See id.* at 921.

35. Under the reasonable-physician standard, "[m]edical customs, to the extent that they exist, are admissible but not binding on the jury." *Id.* at 920-21.

36. HALL ET AL., *supra* note 28, at 326-27.

37. *Id.*

hold[s] physicians liable only if they contravene the custom that prevails among physicians practicing in their geographic community or in communities “similar” to their own. Hence, where the locality rule governs, physicians within one geographic community are peculiarly privileged to fashion, by their own practices, the standard of care they are legally obliged to satisfy.³⁸

A locality rule can narrow the comparison pool to physicians in the same community, state, or region, depending on the nature of the jurisdiction’s locality rule.³⁹ “Since the 1960s, conventional wisdom has characterized the locality rule as an obsolete doctrine, and many of the nation’s courts have purported to modify or renounce it.”⁴⁰ Furthermore, many jurisdictions with a locality rule do not apply it to specialist physicians, to whom they apply a national standard instead.⁴¹

In Iowa, the standard of care is as follows: “A physician must use the degree of skill, care, and learning ordinarily possessed and exercised by other physicians in similar circumstances. The locality of practice in question is one circumstance to take into consideration but is not an absolute limit upon the skill required.”⁴² Thus, a physician in Iowa is subject to the reasonable-physician standard, and the fact finder may consider the locality of the practice in its findings, but the comparison pool is not explicitly defined.⁴³ Specialist physicians, however, do not get the benefit of Iowa’s locality rule and are held to a national standard, which is essentially a disavowal of the locality rule.⁴⁴

38. Theodore Silver, *One Hundred Years of Harmful Error: The Historical Jurisprudence of Medical Malpractice*, 1992 WIS. L. REV. 1193, 1194.

39. HALL ET AL., *supra* note 28, at 326–27.

40. Silver, *supra* note 38, at 1234.

41. See Jay M. Zitter, Annotation, *Standard of Care Owed to Patient by Medical Specialist as Determined by Local, “Like Community,” State, National, or Other Standards*, 18 A.L.R.4th 603, 616–20 (1982).

42. Estate of Hagedorn *ex rel.* Hagedorn v. Peterson, 690 N.W.2d 84, 88 (Iowa 2004); see also IOWA STATE BAR ASS’N, IOWA CIVIL JURY INSTRUCTIONS § 1600.2 (2012) (“A physician must use the degree of skill, care and learning ordinarily possessed and exercised by other physicians in similar circumstances. A violation of this duty is negligence.”); *id.* § 1600.2 cmt. (“In cases where the facilities, personnel, services, and equipment reasonably available to the physician affect the appropriateness of the care, further instruction regarding the resources available to the physician may be appropriate.”).

43. *Hagedorn*, 690 N.W.2d at 88–89; see also Speed v. State, 240 N.W.2d 901, 908 (Iowa 1976) (discussing the Iowa Supreme Court’s disapproval of strict reliance on the locality rule).

44. IOWA STATE BAR ASS’N, *supra* note 42, § 1600.3 (“Physicians who hold themselves out as specialists must use the degree of skill, care and learning ordinarily possessed and exercised by specialists in similar circumstances, not merely the average skill and care of a general practitioner.”); see also Zitter, *supra* note 41, at 614 (citing Bryant v. Rankin, 332 F. Supp. 319, 323 (S.D. Iowa 1971), *aff’d*, 468 F.2d 510 (8th Cir. 1972) (holding an orthopedic surgeon to the national standard); Perin v. Hayne, 210 N.W.2d 609, 615 (Iowa 1973) (holding a neurosurgeon to the national standard); Grosjean v. Spencer, 140 N.W.2d 139, 143 (Iowa 1966) (holding a surgeon to the national standard), *overruled by* Pauscher v. Iowa Methodist

The Iowa Supreme Court appears committed to retaining a form of the locality rule.⁴⁵ The court affirmed the rule as recently as 2004, despite the trend of other courts abandoning it over time.⁴⁶ It stated that the locality rule was created “to protect rural practitioners presumed to be less adequately informed than their colleagues in the city.”⁴⁷ According to the court, the locality rule has “retained validity” because “the facilities, personnel, services, and equipment reasonably available to a physician continue to be circumstances relevant to the appropriateness of the care rendered by the physician to the patient.”⁴⁸

While the standard of care applied to traditional medicine is quite clear, it is unclear how these principles apply to telemedicine. The next Subpart highlights these uncertainties.

C. APPLICATION OF TRADITIONAL MALPRACTICE LAW TO TELEMEDICINE AND THE LEGAL UNCERTAINTIES THAT RESULT

Applying the traditional medical malpractice framework to telemedicine gives rise to a number of legal uncertainties. Given that telemedicine often eliminates face-to-face interactions between physicians and patients, it may become more difficult to determine the existence or absence of a patient–physician relationship.⁴⁹ However, a patient–physician relationship is generally established where a physician gives personalized medical advice to a patient.⁵⁰ Telemedical consultations typically involve the administration of personalized medical advice by a physician; thus, such consultations establish a physician–patient relationship and give rise to a duty of care.⁵¹ Even so, several questions arise: What is the nature of that duty? How does a jurisdiction’s standard of care for traditional medical care

Med. Ctr., 408 N.W.2d 355 (Iowa 1987); *Barnes v. Bovenmyer*, 122 N.W.2d 312, 316 (Iowa 1963) (holding an eye specialist to the national standard). Other states utilize standards based on the same locality, the same or similar locality, or the entire state. Zitter, *supra* note 41, at 608–14.

45. *Hagedorn*, 690 N.W.2d at 88–89.

46. *Id.* at 89; Silver, *supra* note 38, at 1234.

47. *Hagedorn*, 690 N.W.2d at 89 (quoting Amy Jurevic Sokol & Christopher J. Molzen, *The Changing Standard of Care in Medicine: E-Health, Medical Errors, and Technology Add New Obstacles*, 23 J. LEGAL MED. 449, 474 (2002)) (internal quotation marks omitted).

48. *Hagedorn*, 690 N.W.2d at 89.

49. Granade, *supra* note 27, at 68–74; see also Reed, *supra* note 26, at 855–56.

50. Christopher J. Caryl, Note, *Malpractice and Other Legal Issues Preventing the Development of Telemedicine*, 12 J.L. & HEALTH 173, 194 (1997–1998) (“Where telemedicine consultations reflect traditional medical situations, the courts are likely to find a physician–patient relationship exists between the consultant and the patient.”); see also *Adams v. Via Christi Reg’l Med. Ctr.*, 19 P.3d 132, 140 (Kan. 2001).

51. The presence or absence of a physician–patient relationship is a more contentious issue in cybermedicine because it typically involves non-personalized medical advice. Reed, *supra* note 26, at 855–59.

apply to telemedicine? In states that still utilize the locality rule, does it apply to telemedical care?⁵²

Unfortunately, in most states, including Iowa, we simply do not know the answers to these questions.⁵³ There have been very few telemedicine malpractice cases in any jurisdiction from which to draw guidance for a standard of care analysis.⁵⁴ Moreover, the majority of related cases involve doctors who prescribed medication to patients that merely filled out online questionnaires,⁵⁵ which places them into the realm of cybermedicine, not telemedicine.⁵⁶ Given the rapid growth of telemedicine and the legal uncertainties underlying its use, it is inevitable that courts and legislatures will develop a new body of law implicating standard of care issues.⁵⁷ As Hawaii recognized in passing telemedicine legislation,⁵⁸ the standard of care for telemedicine “may have to be modified significantly to accommodate . . . the fact that the physician will not be able to touch the patient” with the absence of an in-person examination.⁵⁹ Without more certainty in this area of law, liability concerns dissuade healthcare providers from utilizing telemedicine’s full potential⁶⁰ and thus prevent patients from realizing its full benefit.

Compounding these concerns, some scholars assert that *non-use* of telemedicine may give rise to malpractice liability as telemedical technologies become more accessible to providers.⁶¹ Thus, without guidance on the associated standard of care, telemedicine could become a “double-

52. GOLDBERG & GORDON, *supra* note 3, at 20–23.

53. Rowthorn & Hoffmann, *supra* note 11, at 32 (“Although there are few legal cases involving telemedicine, there is a widespread assumption that telemedicine may pose new complications to traditional medical malpractice claims As the use of telemedicine grows, malpractice claims relating to telemedicine services may increase and, if so, these complications are likely to create a new body of law.”).

54. NATOLI, *supra* note 13, at 1–3 (“As of this writing, the legal community has seen very little legal precedence on telemedicine malpractice claims, compared to general medical malpractice actions. The main reason for this lack of precedent is that telemedicine is still a relatively new tool being used in the administration of health care services.”); Rowthorn & Hoffmann, *supra* note 11, at 32.

55. NATOLI, *supra* note 13, at 3–4.

56. Telemedicine and cybermedicine are often confused and comingled fields. This makes it essential for legislators who determine the applicable standard of care for telemedicine to also define what qualifies as telemedicine for the purposes of that legislation. *See supra* notes 24–26 and accompanying text.

57. NATOLI, *supra* note 13, at 2–3; Rowthorn & Hoffmann, *supra* note 11, at 32–35.

58. HAW. REV. STAT. § 453-1.3(d) (Supp. 2012) (stating that telemedical care shall meet “the same standards of appropriate practice as those in traditional physician-patient settings that do not include a face-to-face visit”).

59. FLEISHER & DECHENE, *supra* note 15, § 1.04[3][b][ii].

60. *See* NATOLI, *supra* note 13, at 1; Rowthorn & Hoffmann, *supra* note 11, at 32–34.

61. FLEISHER & DECHENE, *supra* note 15, § 1.04[3][b][i] (“On the other hand, there may be legal imperatives to incorporating telemedicine technologies. . . . As telemedicine links become more available, and less expensive, this argument may not seem unreasonable.”).

edged sword,” with “liability for failing to install a technology that is now ‘standard’” and liability for negative outcomes that result from improper use of telemedicine.⁶² Healthcare providers—and ultimately patients—would benefit from a well-defined standard of care for telemedicine.

III. TELEMEDICINE STANDARD OF CARE: THEORIES AND IMPLICATIONS

Precisely defining the standard of care for telemedicine requires analysis of three variables. Current scholarship addressing this problem fails to consider all the relevant variables,⁶³ and this Note provides the first comprehensive analysis of the variables that make up a telemedicine standard of care. More specifically, this Note proposes a telemedicine standard of care that achieves two goals: maximizing the benefits of telemedicine and minimizing the risks associated with its use.⁶⁴

First, states should precisely define what falls within the realm of telemedicine and provide regulatory guidelines on its proper and improper uses.⁶⁵ A precise definition helps providers identify what falls within the realm of telemedicine, and concrete regulatory guidelines help providers confidently utilize telemedicine within the bounds of the regulations.⁶⁶ Moreover, specific regulations on the use of telemedicine may be the most effective means to mitigate the risks associated with telemedicine.

Once a legislature defines the bounds of proper telemedicine use, the legislature must determine the applicable standard of care for telemedicine

62. Kuszler, *supra* note 14, at 316 (“Telemedicine may affect the standard of care by elevating the standard in such a way that *not* having telemedical capacity is in fact substandard. Once a new technology becomes available to medical practitioners, it rapidly becomes the accepted standard.”).

63. See, e.g., FLEISHER & DECHENE, *supra* note 15, § 1.04[3][b] (considering the locality rule and the comparative variable, but failing to consider the reasonable-physician/custom-based distinction, and failing to provide concrete recommendations for a standard of care); Regina A. Bailey, *The Legal, Financial, and Ethical Implications of Online Medical Consultations*, 16 J. TECH. L. & POL’Y 53, 68–71 (2011) (considering the locality rule and the comparative variable, but failing to consider the reasonable-physician/custom-based distinction and failing to provide concrete recommendations for a standard of care); Heather L. Daly, *Telemedicine: The Invisible Legal Barriers to the Health Care of the Future*, 9 ANNALS HEALTH L. 73, 99–105 (2000) (considering only the locality rule in relation to the standard of care); Granade, *supra* note 27, at 74–76 (considering the locality rule, but failing to consider the reasonable-physician/custom-based distinction or the comparative variable and failing to provide concrete recommendations for a standard of care).

64. The balancing metric used in this Note is rooted only in logic: public policy should maximize the benefits of an innovation while minimizing any detriments it may cause.

65. Without such definitional constraints, providers would be left unsure of what care would fall under the telemedicine standard of care and what care would fall under the traditional standard of care. Texas has adopted extensive definitional guidelines. See 22 TEX. ADMIN. CODE §§ 174.1–.12 (2013).

66. For an example, see *id.* (defining Texas’s guidelines for telemedicine).

that falls within those bounds.⁶⁷ As with a traditional standard of care, states have a choice in the means of comparison and the relevant comparison pool. More specifically, states can adopt either the custom-based standard or the reasonable-physician standard, and they can use the locality rule in some form or disavow it. Further complicating the matter, some states have introduced a third variable into the standard of care for telemedicine: a comparison to the standard for traditional medicine in the jurisdiction,⁶⁸ which this Note terms the “comparative variable.” The comparative variable determines the traditional type of care that telemedicine should be compared to when setting the standard of care. It is the most difficult variable to define and apply.

A. DEFINITIONAL BOUNDS AND REGULATIONS OF TELEMEDICINE

Before determining what standard of care to apply to telemedicine, states must define the bounds of telemedicine, including what practices constitute “proper” and “improper” uses of telemedicine. While legislatures should make these determinations after considering the input of medical professionals—and thus, this Note does not endorse a specific set of definitions or guidelines—such statutory guidelines are the most effective way to prevent the improper use of telemedicine. Both Hawaii and Texas provide effective examples that Iowa should consider when implementing its own policy.⁶⁹

Hawaii statutory law requires telemedical treatment to “include a documented patient evaluation, including history and a discussion of physical symptoms adequate to establish a diagnosis and to identify underlying conditions or contra-indications to the treatment recommended or provided.”⁷⁰ Moreover, the Hawaii statute expressly states that: “[i]ssuing a prescription based solely on an online questionnaire is not treatment for the purposes of this section and does not constitute an acceptable standard of care.”⁷¹

Texas provides more extensive guidance to telemedical providers in its Administrative Code.⁷² Before providers can use telemedicine, they must:

67. It is a logical inference that telemedical care that does not comply with definitional bounds set by the legislature necessarily falls outside of the appropriate standard of care. Some states have specifically stated that certain telemedical practices do not constitute an acceptable standard of care. *See* HAW. REV. STAT. § 453-1.3(d) (Supp. 2012).

68. COLO. REV. STAT. § 10-16-123(2) (2012); HAW. REV. STAT. § 453-1.3(d); 22 TEX. ADMIN. CODE § 174.8(b).

69. HAW. REV. STAT. § 453-1.3; 22 TEX. ADMIN. CODE §§ 174.1–12.

70. HAW. REV. STAT. § 453-1.3(c).

71. HAW. REV. STAT. § 453-1.3(d). This statute presumably draws a distinction between telemedicine and cybermedicine. *See supra* Part II.A.

72. Telemedicine in Texas is defined as:

[t]he practice of medical care delivery, initiated by a distant site provider, who is physically located at a site other than the site where the patient is located, for the

give their patients notice regarding telemedicine medical services, including the risks and benefits of being treated via telemedicine, how to receive follow-up care or assistance in the event of an adverse reaction to the treatment or in the event of an inability to communicate as a result of a technological or equipment failure.⁷³

Furthermore, if the telemedical consultation is insufficient to exercise the “ordinary skill and care . . . reasonably necessary for the practice of medicine at an acceptable level of safety and quality in the context of that particular medical encounter,” the physician “must make this known to the patient prior to the conclusion of the live telemedicine encounter and advise . . . the patient to obtain an additional in-person medical evaluation.”⁷⁴ “For [treatment of] new conditions, a patient site presenter must be . . . at the established medical site to assist with the provision of care.”⁷⁵ For ongoing treatment of a condition, “[a]ll patients must be seen by a physician for an in-person evaluation at least once a year.”⁷⁶

The types of definitions and regulations used by Hawaii and Texas are an effective means to reduce the risks and uncertainties associated with telemedicine.⁷⁷ Although the Texas telemedicine regulations may excessively restrict physician autonomy,⁷⁸ they explicitly define “proper” and “improper” uses of telemedicine and, in effect, allow providers to use telemedicine confidently.⁷⁹ However, even with such specificity, states will need to periodically update such regulations to reflect technological advances. The field is so heavily based in technology that the “standard is a moving target.”⁸⁰ “New technology will drive revisions to such standards, and physicians who practice telemedicine will be held responsible for staying current with respect to those changes.”⁸¹ Thus, it may be most appropriate

purposes of evaluation, diagnosis, consultation, or treatment which requires the use of advanced telecommunications technology that allows the distant site provider to see and hear the patient in real time.

22 TEX. ADMIN. CODE § 174.2(10).

73. *Id.* § 174.5(b).

74. *Id.* § 174.5(c).

75. *Id.* § 174.6(b). “The patient site presenter is the individual at the patient site location who introduces the patient to the distant site physician for examination and to whom the distant site physician may delegate tasks and activities.” *Id.* § 174.2(7). They must be state “certified . . . to perform health care services” and only perform tasks within their certification. *Id.*

76. *Id.* § 174.7(c).

77. The appropriate balance of telemedicine regulation and physician autonomy is beyond the expertise and scope of this Note.

78. The Texas Medical Board has disciplined many physicians for failing to comply with the state guidelines on telemedicine. Bailey, *supra* note 63, at 69.

79. See 22 TEX. ADMIN. CODE §§ 174.1–.12.

80. FLEISHER & DECHENE, *supra* note 15, § 1.04[3][b][ii].

81. *Id.*

for states to follow Texas's example and use their administrative codes to provide telemedical guidelines.⁸²

After defining telemedicine and providing guidelines on its use, lawmakers must determine the standard of care for telemedicine that falls within these bounds. This requires numerous determinations, beginning with a choice between the custom-based standard and the reasonable-physician standard.

B. THE CUSTOM-BASED STANDARD VERSUS THE REASONABLE-PHYSICIAN STANDARD

Iowa uses the reasonable-physician standard for traditional medical malpractice claims,⁸³ and it should apply the same to telemedicine. The outdated custom-based standard would not work well when applied to telemedicine because it is ineffective for evaluating new forms of care.⁸⁴ Application of a strict custom-based standard would dictate that any new use of telemedicine necessarily falls outside the standard of care simply because the new use is not customary. Thus, it is more appropriate to apply the reasonable-physician standard, where a fact finder determines if a reasonable physician would have used telemedicine in the same manner in the same or similar circumstances.

Jurisdictions that retain the custom-based standard could apply principles of informed consent law to account for the lack of a custom.⁸⁵ However, this would further complicate matters.⁸⁶ Informed consent is a separate cause of action that was traditionally analyzed under battery law,⁸⁷ and it should be kept out of an already complicated telemedicine standard of care. Moreover, given that battery claims typically involve physical contact between the plaintiff and defendant, it would be difficult to apply battery law to a telemedical consult where the physician and patient do not meet in person.

After choosing between the custom-based standard and the reasonable-physician standard for telemedicine, states must address the locality rule.

82. See 22 TEX. ADMIN. CODE §§ 174.1–12.

83. Estate of Hagedorn *ex rel.* Hagedorn v. Peterson, 690 N.W.2d 84, 88 (Iowa 2004) (“A physician must use the degree of skill, care, and learning ordinarily possessed and exercised by other physicians in similar circumstances.” (quoting the trial court’s jury instructions)); see *supra* Part II.B.

84. See HALL ET AL., *supra* note 28, at 324.

85. *Id.* at 325 (“Liability for experimental deviations from customary practice is more often avoided by resorting to informed consent law.”).

86. Courts may apply one of many different standards for what physicians must disclose to patients before treating them, these include a physician-based standard, a reasonable-patient standard, and a subjective-patient standard. *Id.* at 203–04.

87. HALL ET AL., *supra* note 11, at 126.

C. *THE LOCALITY RULE*

Though the continued use of the locality rule in traditional medical settings may or may not have a sound basis,⁸⁸ it is not appropriate for use in telemedicine. The very purpose of telemedicine is to overcome geographic barriers and provide quality care where it might not otherwise be available.⁸⁹ Quite simply, “[g]eography is irrelevant in the world [of] telemedicine.”⁹⁰ As one scholar states:

Telemedicine will provide physicians in all geographic areas with the opportunity to obtain consultations from specialists, have diagnostic tests and data reviewed at state-of-the-art tertiary care centers and have the patient “examined” by another provider for a second opinion. Telemedicine potentially can conquer distance in an instant. Differences between services available to providers and patients in different geographic areas should further evaporate, resulting in greater pervasiveness of a single standard of care.⁹¹

Iowa currently does not apply the locality rule to specialists, given that specialists should theoretically not be limited by the resources or training available to them in their locality.⁹² Similarly, telemedical providers are not limited to local resources and training, and substandard telemedical care should not be excused because of the locality of the practice.

D. *THE “COMPARATIVE VARIABLE”*

The “comparative variable”⁹³ is an oddity in this analysis, and it can produce significant uncertainty. In essence, it compares the standard of care that the jurisdiction applies to traditional medicine (which is generally well established in a given jurisdiction) with the standard of care that the jurisdiction chooses to apply to telemedicine, presumably in an attempt to

88. This Note offers no opinion on use of the locality rule with regard to traditional medical practice, given that it is beyond its scope. For the status of the locality rule in modern law, see James O. Pearson, Jr., Annotation, *Modern Status of “Locality Rule” in Malpractice Action Against Physician Who Is Not a Specialist*, 99 A.L.R.3d 1133 (1980 & Supp. 2013). For an argument on the locality rule being outdated, see E. Lee Schlender, *Malpractice and the Idaho Locality Rule: Stuck in the Nineteenth Century*, 44 IDAHO L. REV. 361 (2008).

89. Rowthorn & Hoffmann, *supra* note 11, at 3.

90. Daly, *supra* note 63, at 104.

91. Kuszler, *supra* note 14, at 316 (footnote omitted).

92. See Zitter, *supra* note 41, at 614 (citing *Bryant v. Rankin*, 332 F. Supp. 319, 323 (S.D. Iowa 1971), *aff’d*, 468 F.2d 510 (8th Cir. 1972) (holding an orthopedic surgeon to the national standard); *Perin v. Hayne*, 210 N.W.2d 609, 615 (Iowa 1973) (holding a neurosurgeon to the national standard); *Grosjean v. Spencer*, 140 N.W.2d 139, 143 (Iowa 1966) (holding a surgeon to the national standard), *overruled by* *Pauscher v. Iowa Methodist Med. Ctr.*, 408 N.W.2d 355 (Iowa 1987); *Barnes v. Bovenmyer*, 122 N.W.2d 312, 316 (Iowa 1963) (holding an eye specialist to the national standard)).

93. The term “comparative variable” has not been used in other scholarship; it is original to this Note.

provide more certainty to the telemedicine standard. Thus, this comparative variable determines the type of traditional medicine that telemedical care is compared to for purposes of determining the applicable standard of care, and the question is whether telemedical care is more similar to and therefore should be compared to an in-person examination or to other forms of non-face-to-face communications between physicians and patients. At least three states have addressed this comparative variable, and interested organizations and legal scholars have offered various solutions.

1. Approaches to the “Comparative Variable”

The majority of states, organizations, and scholars that have addressed the comparative variable advocate using the same standard of care for telemedicine that is applied to traditional medicine in a given jurisdiction. Proponents of using the traditional medicine standard argue that use of this standard is necessary to protect against the risks associated with telemedicine.⁹⁴ For example, a 2001 Colorado statute states that “[a]ny health benefits provided through telemedicine shall meet the same standard of care as for in-person care.”⁹⁵ In Texas, the Administrative Code states that “[t]reatment and consultation recommendations made in an online setting, including issuing a prescription via electronic means, will be held to the same standards of appropriate practice as those in traditional in-person clinical settings.”⁹⁶ The Federation of State Medical Boards has also endorsed using the same standard for telemedicine:

Treatment and consultation recommendations made in an online setting, including issuing a prescription via electronic means, will be held to the same standards of appropriate practice as those in traditional (face-to-face) settings. Treatment, including issuing a prescription, based solely on an online questionnaire or consultation does not constitute an acceptable standard of care.⁹⁷

However, the practical effect of prescribing the same standard of care is quite unclear as there are no cases exemplifying application of the Colorado

94. Bailey, *supra* note 63, at 68–71.

95. COLO. REV. STAT. § 10-16-123(2) (2012).

96. 22 TEX. ADMIN. CODE § 174.8(b) (2013). As discussed in Part II.B, the Texas Administrative Code provides extensive guidelines for the proper use of telemedicine. *Id.* §§ 174.1–.12.

97. FED’N OF STATE MED. BDS. OF THE U.S., INC., MODEL GUIDELINES FOR THE APPROPRIATE USE OF THE INTERNET IN MEDICAL PRACTICE 5 (2002), *available at* http://www.fsmb.org/pdf/2002_grpol_use_of_internet.pdf (“A documented patient evaluation, including history and physical evaluation adequate to establish diagnoses and identify underlying conditions and/or contra-indications to the treatment recommended/provided, must be obtained prior to providing treatment, including issuing prescriptions, electronically or otherwise.”). The Federation has not updated its guidelines for the practice of telemedicine since 2002.

statute or the Texas regulation.⁹⁸ If application of this standard requires that a physician, in order to comply with the standard of care, must detect everything he or she would have during an in-person examination,⁹⁹ the standard would significantly disincentivize providers' use of telemedicine because the lack of an in-person examination necessarily inhibits the diagnostic ability of physicians.¹⁰⁰ This standard would also create a difficult question for a fact finder: How can we know if a physician would have detected a certain problem during an in-person examination that never happened?

Alternatively, states can prescribe a lesser standard of care for the use of telemedicine. Hawaii enacted a statute in 2009 stating that telemedical care shall meet the "same standards of appropriate practice as those in traditional physician-patient settings that do not include a face-to-face visit."¹⁰¹ Although there is no case law to provide further guidance on this statute,¹⁰² Hawaii's approach provides a more concrete comparison: telemedicine will be held to the same standard as would other non-face-to-face interactions with a patient, such as a telephone conversation.¹⁰³

Finally, instead of creating a fixed comparison, some scholars have proposed a standard of care for telemedicine that shifts based upon the nature of the treatment.¹⁰⁴ These scholars argue that certain types of telemedicine do not put doctors at a diagnostic disadvantage.¹⁰⁵ While this is true, it would be overly onerous to require a legislature to enumerate all the types of telemedical encounters that should be held to varying standards of care. Instead, implementing a shifting telemedical standard of care would require allowing a fact finder to determine if the physician was at a diagnostic disadvantage due to the use of telemedicine.

The comparative variable is quite complicated, and the proposed approaches vary significantly. Given that each of the available approaches to

98. As of August 2013, there are no cases on Westlaw or LexisNexis that cite the Colorado statute or the Texas regulation.

99. FED'N OF STATE MED. BDS. OF THE U.S., INC., *supra* note 97, at 5 ("Treatment and consultation recommendations made in an online setting, including issuing a prescription via electronic means, will be held to the same standards of appropriate practice as those in traditional (face-to-face) settings. Treatment, including issuing a prescription, based solely on an online questionnaire or consultation does not constitute an acceptable standard of care.").

100. Bailey, *supra* note 63, at 84 ("The physical examination is the hallmark of the in-person doctor visit. Physical examination abilities are critical skills for assessing patients and are of lasting value." (quoting Diane L. Elliot & Linn Goldberg, *Physical Examination, in FUNDAMENTALS OF CLINICAL PRACTICE* 149, 150 (Mark B. Mengel et al. eds., 2d ed. 2002))).

101. HAW. REV. STAT. § 453-1.3(d) (Supp. 2012).

102. As of August 2013, there are no cases on Westlaw or LexisNexis that cite the Hawaii statute.

103. HAW. REV. STAT. § 453-1.3(d).

104. See FLEISHER & DECHENE, *supra* note 15, § 1.04[3][b][ii].

105. See *id.* For example, a physician who examines a digitized pathology or radiology image is not at a disadvantage based on his lack of physical proximity to the patient. *Id.*

the telemedical standard of care invokes public policy concerns, the next Subpart considers and weighs these concerns.

2. Public Policy Concerns

The comparative variable requires a balancing of public policy concerns. This Subpart analyzes the advantages and risks of telemedicine, and demonstrates that the potential benefits of telemedicine are so great that its associated risks do not warrant the implementation of a standard of care that significantly inhibits its use.

a. Benefits of Telemedicine

The potential benefits of telemedicine are tremendous. Telemedicine is steadily becoming a more attractive option for healthcare providers, physicians, and patients due to continual improvements in technology.¹⁰⁶ Telemedicine has the potential to slow healthcare's skyrocketing costs.¹⁰⁷ One expert has boldly claimed that the United States could decrease healthcare costs by ninety percent by mirroring India's use of telemedicine.¹⁰⁸ The potential for healthcare cost reduction increases as time passes, given that the costs associated with telemedicine technology have steadily and drastically declined.¹⁰⁹ Moreover, telemedicine can help providers meet the growing demand for healthcare and alleviate provider shortages.¹¹⁰ Also, telemedicine allows patients to avoid physical trips to the

106. Rowthorn & Hoffmann, *supra* note 11, at 1–2.

107. LYKKE ET AL., *supra* note 21, at 4. In 2008, the United States spent sixteen percent of its gross domestic product on healthcare. *Id.* (citing ORG. FOR ECON. CO-OPERATION OF DEV., OECD HEALTH DATA 2010 (2010)).

The availability of immediate access to physicians may prevent inappropriate and expensive trips to the emergency room. Those without health care coverage who currently access non-emergent care in the emergency room would be able to visit a physician online. As consumers become more comfortable receiving care through telemedicine, hospitals could see a decrease not only in inappropriate emergency room usage, but also a decrease in uncompensated care.

S.B. 1676, 25th Leg., Reg. Sess. (Haw. 2009).

108. Vijay Govindarajan, *Telemedicine Can Cut Health Care Costs by 90%*, HARV. BUS. REV. (Apr. 23, 2012, 11:42 AM), http://blogs.hbr.org/cs/2012/04/how_telemedicine_saves_lives_a.html. An Indian doctor has used telemedicine to treat end-stage renal disease for one-fifteenth of the cost of a U.S. hospital. *Id.* While the United States likely could not obtain the savings suggested by this expert, it could certainly reduce healthcare costs significantly through the widespread adoption of telemedicine solutions.

109. Gary C. Doolittle et al., *The Decreasing Cost of Telemedicine and Telehealth*, 17 TELEMEDICINE & E-HEALTH 671, 673 tbl.1 (2011); see Flinn, *supra* note 4 (describing a telemedicine videoconferencing unit that cost \$100,000 in 1996, but is now available for \$5000 to \$7000).

110. LYKKE ET AL., *supra* note 21, at 4. The number of people in the world over sixty years of age is expected to triple between 2000 and 2050. *Id.* This very well could cause a provider shortage unless the provision of healthcare becomes more efficient. See *id.*

doctor and can help prevent the spread of viruses and infections, as many patients become sick through exposure to illnesses within hospitals and clinics.¹¹¹ Finally, telemonitoring patients in their homes may be the most effective and efficient way to treat chronic conditions.¹¹²

Telemedical benefits are even greater for residents of rural states, including Iowa.¹¹³ During remote consultations, doctors utilize videoconferencing equipment to diagnose patients' maladies from hundreds of miles away.¹¹⁴ In many instances, this eliminates the need for patients to travel long distances to see a doctor and reduces time absent from school or work for such a visit.¹¹⁵ In other scenarios, a remote consultation is the alternative to receiving subpar care or no care at all.¹¹⁶ Remote consultation therefore proves to be lifesaving in many situations, as telemedicine allows rural doctors to gain immediate access to distant medical specialists who can make more experienced treatment decisions.¹¹⁷

While telemedicine has vast potential, its use is not without risk. The next Subpart discusses the risks associated with telemedicine, offers solutions to mitigate these risks, and argues that lawmakers should accept a certain degree of unavoidable risk.

111. See I. Eames et al., *Airborne Transmission of Disease in Hospitals*, 6 J. ROYAL SOC'Y INTERFACE S697, S697–98 (2009).

112. See LYKKE ET AL., *supra* note 21, at 4–5. Tele-monitoring frequently involves the transmission of vital information, “such as weight, blood pressure, blood sugar levels and activity,” from the home of the patient to the doctor. *Id.* at 3.

113. Peter Yellowlees et al., *Telemedicine: The Use of Information Technology to Support Rural Caregiving*, in RURAL CAREGIVING IN THE UNITED STATES: RESEARCH, PRACTICE, POLICY 161, 161 (Ronda C. Talley et al. eds., 2011).

114. See Flinn, *supra* note 4 (“The doctor can see in the ear, diagnose an ear infection, call the pharmacy locally, and then the pharmacy delivers the medicine.” (quoting Jeffrey Kesler, Chief Operations Officer, Ga. P’ship for TeleHealth) (internal quotation marks omitted)).

115. See *id.* (“Within basically 30 minutes the child is seen, assessed, diagnosed, and treated, without the child and parents having to take half a day to drive to see the pediatrician.” (quoting Jeffrey Kesler, Chief Operations Officer, Ga. P’ship for TeleHealth) (internal quotation marks omitted)).

116. See S.B. 1676, 25th Leg., Reg. Sess. (Haw. 2009) (“Difficulty or inability to visit a specialist often forces individuals to delay appropriate health care. These delays may ultimately lead to worsened health outcomes which could have been avoided.”); Bill Stanczykiewicz, *Telemedicine for Rural Youth Health*, S. BEND TRIB. (Sept. 5, 2012), http://articles.southbendtribune.com/2012-09-05/news/33624811_1_rural-hospitals-rural-youth-rural-communities (“Rural hospitals have less access to physicians trained in emergency medicine, in pediatrics, or in pediatric emergency medicine.” (quoting Rural Health Res. & Policy Ctr.) (internal quotation marks omitted)).

117. See Tom Robertson, *Telemedicine Gives Rural Doctors Immediate Access to Help*, MINN. PUB. RADIO (Aug. 22, 2012), <http://minnesota.publicradio.org/display/web/2012/08/22/health/telemedicine-gives-rural-doctors-immediate-access-to-help> (describing an emergency room in “the small Minnesota town of Baudette on the Canadian border,” that has “only two doctors and a nurse practitioner on staff,” but uses telemedicine to “tap the help of experienced doctors and nurses at a call center in Sioux Falls, S.D.”).

b. Risks of Telemedicine

Medical experts have noted various shortcomings to telemedicine.¹¹⁸ First, and perhaps most significantly, the absence of an in-person physical exam hinders physicians' diagnostic abilities.¹¹⁹ "The physical examination is the hallmark of the in-person doctor visit."¹²⁰ While physicians use most of their senses in traditional exams, a telemedical examination eliminates a physician's ability to see (as well), touch, or smell the patient.¹²¹ "The cyberconsultation presents an incomplete physical exam, an incomplete picture of the problem that the patient is experiencing, [which] may cause misdiagnosis and inappropriate treatment of the patient's illness"¹²² In some instances, there is not sufficient evidence to support the diagnostic accuracy of telemedicine, and more research is needed to prove that it is safe for wide usage.¹²³

Additionally, there may be dangers associated with prescribing medication via telemedicine.¹²⁴ Patients may abuse telemedicine to conceal something that would necessarily be revealed to a physician in an in-person exam.¹²⁵ Patients may not provide complete medical histories necessary to make prescription decisions, and patients may not be who they claim to be at all.¹²⁶ Also, privacy is an increased concern with telemedicine, as the Internet can easily allow unintended recipients to gain access to highly sensitive material.¹²⁷ Moreover, there is concern about the qualifications of the physicians who treat patients via telemedicine, as there may not be a way for patients to verify the identity and credentials of the person who is treating them.¹²⁸

These concerns are valid, and researchers should continue to evaluate the risks and reliability of telemedicine; however, states can mitigate these risks through the use of statutory guidelines on the proper usage of telemedicine.¹²⁹

118. Bailey, *supra* note 63, at 83–86.

119. *Id.* at 84.

120. *Id.*

121. *Id.*

122. *Id.*

123. Paul J. Heinzlmann et al., *Clinical Outcomes Associated with Telemedicine/Telehealth*, 11 *TELEMEDICINE & E-HEALTH* 329, 333–37, 340–41 (2005).

124. Most litigation involving telemedicine or cybermedicine involves doctors who prescribe medications over the internet. Rowthorn & Hoffmann, *supra* note 11, at 32.

125. See Bailey, *supra* note 63, at 85 (discussing problems with prescribing medicine via telemedicine).

126. *Id.*

127. *Id.* at 85–86.

128. *Id.* at 86 (“[W]ith the nature of the Internet, anyone could pose as a doctor and offer online medical consultations.”).

129. See *supra* Part III.A.

1. Mitigating the Risks of Telemedicine

As discussed more fully in Subpart II.A, definitions, regulations, and guidelines in legislation can mitigate the risks associated with telemedicine. For example, regulations can require physicians to advise patients to seek in-person care if the telemedical consultation is insufficient to diagnose or treat the patient.¹³⁰ Furthermore, it may be wise for legislation to require a facilitator to be present with the patient in some situations to compensate for the lack of in-person interaction with the physician.¹³¹ Also, the legislature should consider limiting what medications physicians may prescribe via telemedicine absent a preexisting physician–patient relationship.

Moreover, healthcare providers are continually researching methods to improve the safety of telemedicine. A report published by the TeamHealth Patient Safety Organization recognizes that “telemedicine can . . . generate opportunities for less than optimal care.”¹³² According to this organization:

Telemedicine is effective in two major areas of healthcare delivery: acute primary care and care of patients with chronic conditions. Telemedicine does not replace the role of the physician in attendance for escalating medical conditions (e.g., evaluation of a patient with chest pain or high fever), although providing telemedicine advice to the bedside clinician would be appropriate.¹³³

After making a series of recommendations for providers who engage in telemedicine, the TeamHealth Patient Safety Organization concludes that “adhering to strategies that can mitigate those risks can help hospitals lower their exposure to negative events while providing quality care to their patients.”¹³⁴

It is likely impossible to eliminate all risk associated with telemedicine; however, as discussed in the next Subpart, the Iowa legislature has recognized on many occasions that a potential benefit to society may warrant the assumption of an increased risk.

2. Accepting Risk and Limiting the Liability of Physicians to Achieve Public Policy Goals

The Iowa legislature has previously limited physicians’ liability in order to achieve healthcare public policy goals. The legislature has consistently

130. See 22 TEX. ADMIN. CODE § 174.5(c) (2013).

131. See *id.* § 174.6(b).

132. PAUL HILDEBRAND, TEAMHEALTH PATIENT SAFETY ORG., TELEMEDICINE RISK MANAGEMENT 2, available at <http://www.teamhealth.com/~media/Files/Helpful%20Tools/White%20Paper%20Telemedicine.ashx> (last visited Nov. 17, 2013).

133. *Id.* at 3.

134. *Id.* at 7.

recognized that potential benefits to society warrant a statutory limitation on healthcare providers' liability. For example, with the creation of the Iowa health information network, an electronic information hub for medical records, the legislature provided civil immunity for physicians who "rel[y] reasonably and in good faith upon any health information provided through the Iowa health information network."¹³⁵ In support of this statute, the legislature provided the following public policy rationale: "Broad use of health information technology and a health information network should improve health care quality and the overall health of the population, increase efficiencies in administrative health care, reduce unnecessary health care costs, and help prevent medical errors."¹³⁶ Thus, the legislature limited the liability of physicians in order to improve the overall quality and efficiency of the healthcare system.

The Iowa legislature has further limited physician liability outside of telemedicine in order to reach public policy goals. For example, the Iowa legislature granted civil immunity to certain providers and physicians who offer free care to the public.¹³⁷ Providers who properly register with the state "shall not be subject to payment of claims arising out of the free care provided under this section."¹³⁸ Another example is Iowa's Good Samaritan statute, which provides that "[a] person, who in good faith renders emergency care or assistance without compensation, shall not be liable for any civil damages."¹³⁹ Similarly, in certain circumstances, those who provide "emergency care or assistance to a victim of the public health disaster shall not be liable for civil damages for causing the death of or injury to a person."¹⁴⁰

The next Part—after considering the available approaches to the telemedicine standard of care and weighing the public policy concerns—offers a solution to the telemedicine standard of care question.

IV. DEFINING THE APPROPRIATE STANDARD OF CARE FOR TELEMEDICINE IN IOWA

In reaching the ideal telemedicine standard of care for Iowa, this Note returns to the two competing public policy goals: maximizing the benefits of telemedicine while mitigating the risks associated with its use. Based upon

135. IOWA CODE ANN. § 135.156E(10) (West Supp. 2013).

136. *Id.* § 135.155A(1)(b).

137. *Id.* § 135.24(3) (West 2007 & Supp. 2013).

138. *Id.* For the purposes of the free care provided, physicians are considered to be employees of the state. *Id.*

139. *Id.* § 613.17(1) (West 1999 & Supp. 2013). The immunity exists "unless such acts or omissions constitute recklessness or willful and wanton misconduct." *Id.*

140. *Id.* § 135.147(1) (West Supp. 2013). The statute requires that such assistance be rendered "in good faith and at the request of or under the direction of the department or the department of public defense." *Id.*

an analysis of all the relevant variables, the ideal standard should: (1) precisely define the bounds of telemedicine and outline its proper and improper usage; (2) use the reasonable-physician standard; (3) abandon the locality rule; and (4) adopt a lower comparative standard that recognizes when physicians are put at a diagnostic disadvantage.

Precisely defining the bounds of telemedicine and outlining its proper and improper usage would eliminate uncertainty for providers and allow for the expansion of telemedicine in Iowa. Furthermore, this may be the most effective means to reduce risks associated with telemedicine.¹⁴¹ The legislature should specifically require that physicians inform patients of the risks associated with telemedicine to ensure that patients are making an informed decision to forego an in-person examination.¹⁴² Further, regulations should define when physicians may proceed with telemedical care and should require an in-person examination before a physician can prescribe certain medications. Experts who understand the medical risks of foregoing an in-person examination should determine the extent and nature of these regulations.¹⁴³

The legislature should require courts to apply the reasonable-physician standard to telemedicine, given that the custom-based standard is not a viable measure of new treatment methods.¹⁴⁴ Furthermore, the legislature should preclude use of the locality rule when evaluating telemedical care.¹⁴⁵ The very purpose of telemedicine is to overcome geographic barriers, and the locality of a patient or physician should not excuse subpar care when geography is irrelevant.¹⁴⁶

When telemedical care falls within the definitional regulations outlining the proper and improper uses of telemedicine, the legislature should apply a standard of care similar to Hawaii's, which recognizes that physicians are at a diagnostic disadvantage when they cannot examine a patient in person.¹⁴⁷ However, the standard *should not* excuse subpar care in areas of telemedicine that do not put physicians at a disadvantage simply because assistance was

141. See *supra* Part III.A.

142. See 22 TEX. ADMIN. CODE § 174.5(b) (2013) (“Physicians who use telemedicine medical services must, prior to providing services, give their patients notice regarding telemedicine medical services, including the risks and benefits of being treated via telemedicine, how to receive follow-up care or assistance in the event of an adverse reaction to the treatment or in the event of an inability to communicate as a result of a technological or equipment failure.”).

143. More research needs to be conducted on the accuracy of telemedicine’s diagnostic accuracy in various areas of medicine. Heinzlmann et al., *supra* note 123, at 340–41.

144. See *supra* Part III.B.

145. See *supra* Part III.C.

146. See Daly, *supra* note 63, at 104; Kuzler, *supra* note 14, at 316.

147. See HAW. REV. STAT. § 453-1.3(d) (Supp. 2012).

rendered through telemedicine.¹⁴⁸ Thus, a fact finder should determine if a given physician had a diagnostic disadvantage based upon an analysis of the circumstances surrounding the treatment. If there was a diagnostic disadvantage, then the physician should be held to the “standards of appropriate practice as those in traditional physician-patient settings that do not include a face-to-face visit,”¹⁴⁹ such as a telephone conversation.¹⁵⁰ However, if the fact finder determines that the circumstances did not put the physician at a diagnostic disadvantage, the physician should be held to the same standard as in traditional medicine.¹⁵¹

This leaves a fact finder to make three determinations. First, the fact finder must determine whether the physician complied with the legislature’s telemedicine regulations and definitions. If not, then the care necessarily falls outside the acceptable standard. If the physician did comply with regulations, then the fact finder must make a second determination: whether the circumstances surrounding the telemedical care put the physician at a diagnostic disadvantage. If there was a diagnostic disadvantage, then, while taking account of that diagnostic disadvantage, the fact finder should determine if a reasonable physician would have followed the defendant–physician’s course of action in the same or similar circumstances. If there was not a diagnostic disadvantage, then the fact finder should measure the physician’s care against the traditional standard of care.

Use of this multi-step test to determine the applicable standard for telemedicine accomplishes multiple public policy goals. It eliminates uncertainty and allows providers to engage in the use of telemedicine more confidently. This should result in the growth of telemedicine in Iowa, making healthcare more affordable, accessible, and efficient for its citizens.¹⁵² While there are concerns about the reliability of telemedicine, they are outweighed by the potential benefits of its usage. Furthermore, the legislature can effectively curb many of these concerns through the use of definitional bounds and regulations which outline the proper and improper uses of telemedicine.¹⁵³ It is only when telemedical care falls within these statutory definitions and regulations that a lower standard of care should be applied.

148. Specifically, scholars most often include pathology and radiology in this group. *E.g.*, FLEISHER & DECHENE, *supra* note 15, § 1.04[3][b][ii].

149. HAW. REV. STAT. § 453-1.3(d).

150. Telephone conversations have been referred to as the oldest form of telemedicine. HILDEBRAND, *supra* note 132, at 3.

151. This includes teleradiology, for example. FLEISHER & DECHENE, *supra* note 15, § 1.04[3][b][ii].

152. *See supra* Part III.D.2.a.

153. *See supra* Part III.A.

Adopting this lower standard of care—as Hawaii has done—is superior to adopting the same or higher standard than that applied to traditional medicine in the jurisdiction. Using the same standard implies that physicians engaged in telemedicine will be held liable anytime they do not recognize something that they should have identified in an in-person examination.¹⁵⁴ This significantly disincentivizes the use of telemedicine, given the inherent diagnostic disadvantage associated with its use.¹⁵⁵ Furthermore, implementing the same standard as that applied to traditional medicine is not the most effective means to protect against abuses of telemedicine, given that the traditional standard is extremely vague when applied to telemedicine.¹⁵⁶ Concrete statutory regulations and guidelines are more effective at protecting patients' safety, and states should utilize this approach instead.

V. CONCLUSION

Telemedicine malpractice issues will become increasingly relevant in the years to come. Physicians' use of telemedicine has increased greatly in recent years, and evidence points toward the continued growth of the industry.¹⁵⁷ A recent study forecasts that the worldwide telemedical equipment market will grow from \$163.3 million in 2010 to \$6.28 billion in 2020.¹⁵⁸ Moreover, the federal government incentivizes the implementation of telemedical solutions with grants.¹⁵⁹ The Department of Health and Human Services currently offers three different telemedical grant programs to improve telemedicine networks and create resource centers.¹⁶⁰ Furthermore, the Patient Protection and Affordable Care Act ("ACA") provides strong incentives for adopting telemedicine.¹⁶¹ The Center for Medicare and Medicaid Innovation—which

154. FLEISHER & DECHENE, *supra* note 15, § 1.04[3][b][i] ("[I]f the physician utilizes new telemedicine technology, a patient that suffers a poor outcome might allege that the physician negligently utilized the new technology in place of customary practices (e.g., a 'hands-on' evaluation). Specifically, for example, the patient might claim that he suffered injury because the remote consult prevented the teleconsulting physician from diagnosing a condition that would have been detected during a face-to-face encounter.").

155. Bailey, *supra* note 63, at 69.

156. *See supra* Part III.D.1.

157. *See* WORLD HEALTH ORG., *supra* note 6, at 7.

158. Ken Terry, *Telehealth Market to Hit \$6.28 Billion by 2020*, INFORMATIONWEEK (Sept. 20, 2011, 2:52 PM), <http://www.informationweek.com/healthcare/mobile-wireless/telehealth-market-to-hit-628-billion-by/231601670> ("The global telehealth market is headed for explosive growth over the next decade The main reasons are increasing disease prevalence, an aging population, and governmental pressure to hold down healthcare costs.").

159. Rowthorn & Hoffmann, *supra* note 11, at 3.

160. *Telehealth*, HEALTH RES. & SERVS. ADMIN., U.S. DEP'T OF HEALTH & HUMAN SERVS., <http://www.hrsa.gov/ruralhealth/about/telehealth> (last visited Nov. 17, 2013).

161. Rebecca Vesely, *Telehealth to Benefit from SCOTUS Ruling, but Barriers Remain*, IHEALTHBEAT (Aug. 6, 2012), <http://www.ihealthbeat.org/insight/2012/telehealth-to-benefit->

the ACA created—has already directed \$120 million toward telemedical projects,¹⁶² including a \$7.7 million grant to the University of Iowa in partnership with a number of hospitals in rural eastern Iowa.¹⁶³

Moreover, the Iowa legislature has indicated its desire to advance telemedicine within the state. In 2008, it created the “Iowa health information network,” an information hub for medical records in the state.¹⁶⁴ The statute recognized that “[w]idespread adoption of health information technology is critical to a successful Iowa health information network.”¹⁶⁵ “The network provides incentives for health care professionals to utilize the health information technology and provides rewards for any improvements in quality and efficiency resulting from such utilization.”¹⁶⁶

Given that telemedicine is a rapidly expanding field and that the Iowa legislature has indicated its desire to advance telemedicine in Iowa, the legislature should now define standards for the use of telemedicine to: (1) eliminate the uncertainties surrounding telemedicine malpractice; (2) alleviate healthcare providers’ hesitation to utilize telemedicine; and (3) encourage the expansion of proper telemedicine use in Iowa. In approaching this task, Iowa should balance the risks and benefits of telemedicine. As Hawaii’s approach demonstrates, it is possible to limit the risks of telemedicine while still recognizing the diagnostic disadvantage faced by physicians who use it. Thus, Iowa should follow the Hawaii approach and adopt a standard of care for telemedicine that recognizes the diagnostic disadvantage associated with its use but affirms liability for physicians that fail to comply with regulatory guidelines.

from-scotus-ruling-but-barriers-remain. John Ryan, a telehealth business director at Phillips Healthcare, said:

[T]he ACA is spurring innovation in the sector because of the law’s provisions that nudge the health care system away from the traditional fee-for-service model and towards tying payment with quality. For instance, the law ties Medicare reimbursement to hospitals’ success in keeping patients from being readmitted within 30 days of discharge.

Id.

162. *Id.* “The programs mostly focus on targeting patients with chronic diseases for interventions via telemedicine supported by a team of clinicians . . .” *Id.*

163. Cindy Hadish, *Eastern Iowa Hospitals Partner with University of Iowa on Telehealth Project*, GAZETTE, <http://thegazette.com/2012/06/15/eastern-iowa-hospitals-partner-with-university-of-iowa-on-telehealth-project/> (last updated June 15, 2012, 1:18 PM) (“The project will optimize the use of electronic medical records and telehealth technologies to improve communications channels with patients, their families, and the local providers they will see after discharge.”); *see also Health Care Innovation Awards: Iowa*, CTRS. FOR MEDICARE & MEDICAID SERVS., <http://www.innovation.cms.gov/initiatives/Health-Care-Innovation-Awards/Iowa.html> (last visited Nov. 17, 2013).

164. IOWA CODE ANN. § 135.155 (West Supp. 2013).

165. *Id.* § 135.155(3).

166. *Id.* § 135.155(3)(b).

As telemedicine continues to grow, patients can decide for themselves if they wish to use telemedicine and possibly forego an in-person examination—with knowledge that their decision to use telemedicine may increase risk of misdiagnosis. Thus, telemedicine—with or without limitations on provider liability—does not force patients to use the new technology; it merely gives them the option, and lawmakers should make telemedicine an attractive and accessible option for patients.