

ORIGINAL CLINICAL RESEARCH

Medical Boards: Impact of Growing Virtual Care and Need for Integrated Approach to Enhance Care Delivery

Amar Gupta, PhD^{1,2} ; John Halamka, MD^{2,3} ; Lauren Park, BA⁴ ; Naomi Kim, BA⁵ ;
Veda Donthireddy^{4,6} ; Mariam Dogar, MSM⁷ ; Dinesh Patel, MD⁸ 

¹Massachusetts Institute of Technology, Cambridge, USA; ²Editor-in-Chief, Telehealth and Medicine Today; ³Mayo Clinic, Rochester Minnesota, USA; ⁴Wellesley College, Massachusetts, USA; ⁵JPMorgan Chase, New York City, USA; ⁶Yale School of Medicine, New Haven, Connecticut, USA; ⁷Harvard Medical School, Boston, USA; ⁸Mass General Brigham, Harvard Medical School, Boston, USA

Corresponding Author: Amar Gupta, Email: agupta@mit.edu; Lauren Park, Email: lpark6@wellesley.edu

Keywords: digital health, medical board oversight, National Practitioner Data Bank, quality, telehealth, virtual care

Abstract

The increased amount of virtual care during the COVID-19 pandemic exacerbates the challenge of providing appropriate medical board oversight to ensure proper quality of care delivery and safety of patients. This is partly due to the conventional model of each state medical board (SMB) holding responsibility for medical standards and oversight only within the jurisdiction of that state board and partly due to regulatory waivers and reduced enforcement of privacy policies. With a revoked license in one state or even multiple states of the U.S., physicians have been able to continue to practice by obtaining a medical license in a different state. Individualized requests were sent to 63 medical boards with questions related to practice of telemedicine and digital health by debarred or penalized medical doctors. The responses revealed major deficiencies and the urgent need to adopt a nationwide framework and to create an anchor point to serve as the coordinator of all relevant information related to incidents of improper medical practice. The ability to cause damage to large number of patients is significantly more now. Federal and state agencies urgently need to provide more attention and funding to issues related to quality of care and patient care in the changing ecosystem that includes medical specialists at a distance and the use of evolving digital health services and products. The creation, maintenance, and use of integrated information systems at national and multinational levels are increasingly important to provide effective and safe virtual care across state and national boundaries.

Received: March 25, 2022; Accepted: April 13, 2022; Published: May 31, 2022

Oversight of Patient Care

The COVID-19 pandemic led to numerous regulatory changes and waivers, including relaxation of state licensure requirements and reduced enforcement of privacy policies. The increased amount of virtual care during the pandemic caused a misalignment between medical board oversight and care delivery.

Each state medical board (SMB) holds responsibility for medical standards and licensing, examining complaints, and making decisions about disciplinary action against physicians that apply only within the jurisdiction of that state board. *With a revoked license in one state or even multiple states of the U.S., physicians have been able to continue to practice by obtaining a medical license in a different state.* Only half of SMBs reviewed the National Practitioner Data Bank (NPDB) less than 100 times during 2017; and

13 SMBs did not run a single search on the database.¹ Two states—Wyoming and Florida—which set up automatic notifications of any changes in a doctor's records accounted for more than two-thirds of total searches.¹ The NPDB's policy "prohibits the public—including researchers and reporters—from accessing identifiable records," making it challenging to notify hospitals and patients of potentially dangerous physicians.² Further, the majority of cases of physician misconduct go unreported,³ and the "word of mouth" mode for expressing concern is inapplicable in case of virtual care across towns and states.

Oversight of Medical Doctors Involved in Traditional Medicine, Telemedicine, and Digital Health

Based on contact information provided by the Federation of State Medical Boards (FSMB), one of the authors sent

individualized email messages and survey forms in 2019 to the executive director or other senior official of 63 medical boards, including allopathic and osteopathic state medical boards and the medical boards of Guam, Virgin Islands, Puerto Rico, Commonwealth of the Northern Mariana Islands, and the District of Columbia.

The questions to the medical boards included the following ones related to telemedicine and digital health:

1. Are any special restrictions placed on doctors who have been dismissed, suspended, or otherwise penalized, in terms of management of medical facilities, conducting of computer assisted medical tests, access to medical records, ability to provide telemedicine services, and any other activity related to artificial intelligence (AI), machine learning, and data analytics?
2. Are there are cases where a doctor who has been debarred/penalized was prohibited from practicing telemedicine and/or using digital health-related tools/techniques on intrastate/interstate basis? If so, we would appreciate details of such cases to the extent that you can share such information with us.
3. Further, are there cases now, or in the past, where the complaint relates to practice of telemedicine and/or use digital health related tools/techniques? If so, we would appreciate details of such complaints to the extent that you can share such information with us.

Based in part on reminders by phone and email, the survey had an overall response rate of 41%, with 36% of state and territory medical boards accepting the request and answering the questions and 5% declining the request. The ones who declined cited the following reasons:

1. The (name of particular state) Freedom of Information Act pertains specifically to residents of the state. Therefore, our office is unable to respond to your inquiry. (*Authors' Reaction: This constitutes a major barrier in examining complaints involving interstate practice of telemedicine.*)
2. I decline to participate. I reviewed the article attached to one of your earlier emails. Based on that article, I cannot accept your statement that you will be doing an objective report and thus do not want to be associated with it in any way.
3. I do not appreciate your tone or your threats when you are asking that we take time to respond to your survey. I had planned to respond but now you will simply have to put no information available. (*Authors' Reaction: SMBs who had not reacted to the first request were politely requested to respond by a particular date in order for the inputs to be included in the study.*)
4. Another SMB wrote they did not “maintain records in the format [we] requested;” and per their state law,

they did not have to “create, compile, or program a new record” to satisfy the request.

The responses to the three questions from the state/territory medical boards are summarized in Exhibit 1. In most cases, the full response has been reproduced in the exhibit. However, in few cases, only the key part of the response is shown in that exhibit.

The representative from one SMB of Idaho communicated that whatever disciplinary action they take with a physician licensed in Idaho to treat patients using telemedicine, they have no control over whether or not that physician can treat a patient in another state. This is the type of issue the Interstate Medical Licensure Compact, if adopted by every state and improved upon, could potentially solve. The Act introduced the concept of a Compact to make it easier for physicians to obtain licenses to treat patients in multiple states, in theory allowing states to better share disciplinary information. The Compact currently comprises 35 states, the District of Columbia (DC), and Guam. When applying for interstate licensing, physicians must “not have any history of disciplinary actions toward their medical license, not have any criminal history, not have any history of controlled substance actions toward their medical license, and not currently be under investigation.”⁶

Some SMBs provided links to their websites where members of the public can see past disciplinary actions. Several of the other states had a single list of disbarred professionals from all fields, including hairdressers, painters, and persons from other professions, in a format that is difficult to analyze and sort.

Discussion of Next Steps Relevant to COVID-19 and Beyond

The COVID-19 pandemic led to abrupt relaxation of regulations related to medical doctors practicing beyond the traditional political boundaries. These regulations pertain to many issues including the ability to practice across state boundaries, the restrictions to ensure privacy of patient data, and the permissible options for government and non-government organizations to pay for delivery of telemedicine services to patients.

The responses highlighted that while different states have encountered complaints involving telemedicine, few states have regulations specific to telemedicine or the ability to utilize their databases to identify past disciplinary actions and complaints specifically related to digital health and telemedicine. Until such regulations for telemedicine are formulated and implemented, virtual care cannot be held to the same standard of care as in person care.

Only six respondents explicitly mentioned how their disciplinary actions may relate to telemedicine and digital health. In terms of the standard of care, most medical boards stated that the practice of medicine provided via

Exhibit 1. Summary of Responses to Survey Questions 1, 2, and 3 by State/Territory Medical Board

State/Territory	Responses to Question 1 (Specific restrictions on practice of digital health and telemedicine subsequent to determination of physician misconduct)	Responses to Questions 2 and 3 (Past cases of penalization for digital health and telemedicine practice + current complaints in these areas)
California	“There could be based upon the actions taken by the Board. We have issued orders where during probation a physician cannot own a medical spa and cannot be a medical director of a medical spa.”	<p>Past: “The Board’s computer system does not identify cases in this manner, but to the best of our knowledge we do not have anyone currently with this type of restriction. However, there may have been a decision in the past where an individual could not practice telehealth.”</p> <p>Current: “Unfortunately our computer system does not allow us to pull information with this detail. The only way this could be obtained was by reviewing each different decision and its outcome.”</p>
Connecticut	“This [is] determined on a case-by-case basis depending on the allegations and findings.”	<p>Past: Authors’ note: This State Medical Board provided a 2005 Memorandum of Decision related to a doctor who had “written approximately 10,000 prescriptions for patients he has never seen, including dozens to residents of Connecticut. Three states had revoked his license to practice in earlier years.”</p> <p>Current: “Pursuant to State statutes compliant investigations are confidential. This information is not subject to disclosure.”</p>
District of Columbia	“The Board can impose any limitations it believes are necessary to ensure the safety of patients and the public. This would include the areas identified above, as they related to his or her practice of medicine.”	<p>Past: “I am not aware of any such cases.”</p> <p>Current: “I cannot provide details of the complaint, but we have received complaints alleging issues of inappropriate access of the medical record, and inappropriate/substandard evaluations via telemedicine.”</p>
Idaho	“Any restrictions placed on a physician based on discipline taken will depend on the terms of the Stipulation and Order entered into by the physician and the Board. There are no blanket restrictions that are used with every licensee. However, the restrictions listed in Question #4 are not typically imposed by this Board.”	“Regarding practicing telehealth, the Idaho Board has the jurisdiction to limit a physician’s practice of telehealth in Idaho or for Idaho patients if the case merits such a restriction; however, the Board has no jurisdiction from preventing a physician licensed in another from practice telehealth in that state.”
Iowa	“It is very rare for the Iowa Board of Medicine to restrict a physician’s ability in terms of management of medical facilities, conducting of computer assisted medical tests, access to medical records, ability to provide telemedicine services, and any other activity related to AI, Machine Learning, and Data Analytics.”	
Kansas	<p>“This type of practice problem is usually referred to as an SOC problem. A regulatory board may take action in a wide variety of forms,</p> <ul style="list-style-type: none"> • Education, training, • Practice limitations in terms of scope Can order MRI but not allowed must refer out to another for reading • Practice limitation in terms of environment ... can order and read MRI but can’t do solo practice • Monitoring or chart review or other remediation • Any sanction imposed would apply irrespective of whether the practitioner practiced facetoface (traditional) medicine or some form of telemedicine.” 	<p>Past: “There have always been SOC violation cases; any disciplinary sanction would apply regardless of whether the doctor practiced traditional facetoface or telemedicine modality. Medical regulatory boards often classify/categorize complaints into different types. Some boards have very detailed classifications other have broad classifications.”</p> <p>Current: “Maybe ... Maybe the complaint came in as missed diagnosis and failure to read MRI accurately ... That complaint isn’t tagged as “facetoface” or “telemedicine” case. That complaint is tagged as a SOC Investigation. The Board sanction isn’t labeled “facetoface” or “telemedicine” sanction; the sanction provides for discipline or remediation on the SOC issues and the remediation apply to all types of practice; facetoface and telemedicine.”</p>

Exhibit 1. (Continued)

State/Territory	Responses to Question 1 (Specific restrictions on practice of digital health and telemedicine subsequent to determination of physician misconduct)	Responses to Questions 2 and 3 (Past cases of penalization for digital health and telemedicine practice + current complaints in these areas)
Kentucky	“The Board considers each case on an individual basis and does not have a one size fits all kind of restrictions they place on its licensees.”	Past & Current: “We have had a few cases in the past involving telemedicine; however, I am unable to provide details due to fact the Board does not categorize actions based on use of telemedicine, and I simply do not recall the facts about the case(s).”
Michigan	“The circumstances of each case are reviewed individually and the sanctions are given accordingly. There is no set time period for how long a license is suspended, revoked, or monitored on probation. Michigan law provides guidelines for the nature of the violations and appropriate sanctions. But as you can see, there is broad discretion with the Board of Medicine, Disciplinary Subcommittee.”	
Montana	“This depends entirely on the final order approved by the Montana Board. Each order is unique and responds to a particular set of facts. There is no set format or requirements for the Board’s action. That said, a typical “revocation” means that all medical practice is prohibited during the life of the revocation. However, a licensee can appeal a revocation to the courts.”	
Nebraska	“All recommendations of the Nebraska Board of Medicine and Surgery are provided on a case-by-case basis.”	Past & Current: “In regards to complaints, they are handled by a special unit and the data you are requesting is not available. All complaints are confidential in the state of Nebraska pursuant to Neb. Rev. Stat. 38-1,106.”
Nevada	“It is entirely the discretion of the Board at the time of the adjudication of a disciplinary matter.”	Past & Current: “None that are a matter of public record.”
New Hampshire	“This would be decided on a casebycase basis.”	
New Mexico*	“Not explicitly in the rules.”	
North Carolina	“The type and duration of the limitation or restriction is fact-dependent. For example, a physician who has engaged in sexual misconduct with a patient may be restricted from treating patients of the opposite sex. If we have evidence that a physician has prescribed controlled substances below the standard of care, the physician may have his ability to prescribe Schedule II and III drugs.”	
Pennsylvania*	“Practice must be performed in conformance with the scope (and if appropriate, limitations) on their license, must be in compliance with applicable state and federal laws and regulations, and must be performed within the applicable standard of care.”	
Rhode Island	“This would depend on the underlying disciplinary action.”	
Tennessee	“All decisions on disciplinary actions are made on a case-by-case basis based on the rules and statues governing the practice.”	Past & Current: “All complaints go through the Office of Investigations, and I do not have access to any of that information. I am not aware of any complaints specifically related to the practice of telemedicine or digital health-related tools/ techniques; however, you may use the link below to search for possible disciplinary action.” (Authors’ note: This link is included as Reference 4.)

Exhibit 1. (Continued)

State/Territory	Responses to Question 1 (Specific restrictions on practice of digital health and telemedicine subsequent to determination of physician misconduct)	Responses to Questions 2 and 3 (Past cases of penalization for digital health and telemedicine practice + current complaints in these areas)
Washington	“I am not aware of any prohibitions imposed related to use of AI, machine learning, or data analytics. I am not aware of any cases where telemedicine restrictions are imposed. If something is imposed it would be to correct the usage of telemedicine to comply with our laws, policies, and guidelines. For example, if a practitioner were to be practicing telemedicine and prescribing without actually interacting with the patient, we would impose a restriction that required interaction via two-way audio video to comply with statute and policy in Washington as opposed to banning their practice outright. Alternatively, we might impose a restriction on prescribing controlled substances via telemedicine.”	<p>Past: “None that I am aware of for Washington state. I struggle to imagine a situation where the WMC would restrict use of specific tools. We don’t ban procedures or techniques (such as laparoscopic surgery), generally. The restriction of procedures is generally done at the hospital level. If we restrict something, it is usually broader in nature. The most common is a restriction on prescribing opioids, but we have also seen restrictions on seeing patients under a certain age or gender.”</p> <p>Current: “This is the only case that has led to any form of discipline of which I am aware. I am attaching a link to the stipulation which includes the sanctions (Note by Authors: Summary of case provided by this SMC in the following sentences). Bear in mind, this is a case resulting in informal discipline where the practitioner does not admit to wrongdoing but agrees to undertake remediation measures. In this case, it is generally agreed by the WMC and the licensee that that company misrepresented their model and their standards, which resulted in the complaint being submitted to the WMC by the insurance company.”</p>
Washington*	“The conditions placed on a sanctioned license are specific to the individual complaint case.”	
West Virginia	“It is possible for a physician to be restricted from performing certain services or procedures through a consent order, the terms of which are mutually agreed upon between the practitioner and the Board.”	
West Virginia*		<p>Past & Current: “To date, the West Virginia Board of Osteopathic Medicine has not issued any disciplinary action strictly for telemedicine practice. It is, in part, because of the restrictions on the use of telemedicine within the State of West Virginia. We do not allow the practice of telemedicine without a face-to-face patient contact with a healthcare provider. This could be a nurse, physician assistant or other provider. However, the patient must be physically seen by a healthcare provider before a telemedicine encounter.”</p>
Wisconsin	“Probably the best place for you to search orders is in the summary section of the Board’s newsletters, which are on the Department website.” (Authors’ note: This link is included as Reference 5.)	<p>Past & Current: “I am not aware of any cases where a practice limitation related to telemedicine or to the use of telemedicine related tools was placed on a doctor. The Wisconsin Medical Examining Board has the power to impose a wide range of disciplines, including limitations on practice. If there was a case involving a limitation related to telemedicine, then the Board Order would be available to the public and would be placed on the department website.”</p>

* Indicates osteopathic medical board; other medical boards are allopathic or deal with both. AI: artificial intelligence; MRI: magnetic resonance imaging; SMC state medical commission; SOC: standards of care; WMC: Washington Medical Commission;

telemedicine technologies is subject to the same standard of care, professional practice requirements, and scope of practice limitations as traditional in-person physician-patient encounters. While some regulations exist for medical records, little to no regulations exist regarding the standard of care via telemedicine. As telemedicine services increasingly surmount state and national borders, such coordination will ultimately need to be provided at the global level.

One of the authors has served as a member of one SMB for several years—including as chairman for two years—and feels that the following factors characterize the situation for many of SMBs:

- The members of the state medical boards are typically appointed by the state’s governor, so the responsibility partially rests on the governor;

- The funding for SMBs comes from licensure fees paid by doctors. State and federal governments do not usually pay the boards adequately, despite the fact that citizens' complaint and discipline processes consume most of the money given by doctors for licenses; and
- Since the boards of medicine lack adequate funds to deal with the evolving issues and complaints, they prioritize issues and cases for investigation. For example, the ones that get to the boards' complaint committee fast are cases involving sexual abuse, chemical dependency, or substandard care.

As technologies and business processes evolve, societal safeguards and constraints that originally evolved at the local level are gradually modified and implemented first at state levels, and then at the national and supra-national level. Using the example of how child custody laws went through this gradual transition, the four-level paradigm has been previously proposed in the context the health-care arena.⁷

While the constitutionality of state laws and regulations on interstate practice of telemedicine was questioned as far back as 2011 based on the provisions for interstate commerce,⁶ the U. S. Department of Veterans Affairs (VA) was the first governmental agency to formulate the procedure for its seamless application across state boundaries. This happened in 2017. The VA has its own internal system for investigating cases of alleged medical malpractice. Both houses of congress recently passed bills to compel the VA to provide relevant information to SMBs on a timely basis.

In the past, the FSMB played a key role in convincing state medical boards to adopt common approaches, as was the case with medical licensing examinations, which used to be unique to every state (as still exist in many states in the legal profession) and was replaced by two national examinations: (i) the United States Medical Licensing Examination (USMLE), which is co-managed by FSMB; and (ii) the Comprehensive Osteopathic Medical Licensing Examination of the United States (COMLEX-USA), which is owned entirely by the National Board of Osteopathic Medical Examiners. The FSMB is a non-profit 501c6 organization supportive of state medical boards but is without formal regulatory authority or oversight itself. In 2019, it received a U.S. Health Resources and Administration (HRSA) grant of \$2.5 million through the Coronavirus Aid, Relief, and Economic Security (CARES) Act to develop a nationally accessible database called ProviderBridge.org of all licensed health care providers, not just doctors, who voluntarily opted to be identified as an across state-lines provider in the case of national emergencies.⁹

This evolving database is envisaged to be an outgrowth of a physician database the FSMB manages, Docinfo.org,

which was used by the authors to search records of physicians who were practicing after being disbarred in more than one state. The authors looked at the information for Rick Ray Redalen who was not only given a license to practice from Texas but was also appointed by the state government as a member of an important committee on rural health. Further, the online information showed his involvement and leadership of a telemedicine company. The information at the concerned site within docinfo.org summarizes the actions taken against by the state medical boards of Hawaii, Iowa, Louisiana, and Minnesota and refers the observer to go to the concerned sites of the state boards. The sites of the respective boards have redacted most of the information which makes it very difficult, if not impossible, to make an objective opinion. The state-level information itself needs major enhancement, in terms of completeness of records based on information from diverse channels and minimization of redacted details. In an integrated system, all of the relevant information, including that from state government entities, hospitals, and other relevant organizations, must be made accessible in an integrated and up-to-date manner. As telemedicine relaxations amplified during the COVID-19 pandemic across state and national lines,^{10,11} the need for access to consistent information has increased tremendously.

Further, the issue of how expenses related to oversight and ensuring high quality of medical care and patient safety is very important. As has been mentioned above by the author who previously served as a Chairman of an SMB, since state and federal governments do not usually pay the boards adequately, despite the fact that citizens' complaint and discipline processes consume most of the money given by doctors for licenses, each SMB must decide on the priority to be attached to different types of complaints. Because of the large number of complaints, even relevant government agencies close cases without investigation citing lack of resources.

Poor professional practices lead to large subsequent costs such as in the case of State of Michigan which is paying half a billion dollars to the people who have been hurt by a medical doctor.

Transition to Virtual Care: Next Steps

The advent of new technologies, business processes, medical procedures, and other operational guidelines are characteristics by their own set of benefits and challenges. The latter can be in terms of safety of human lives, costs incurred, and associated time delays.

Here is one example of an operational guideline that led to a major tragedy. Based on the 9/11 tragedy, it was decided that the cockpit of the plane will always be kept locked during a flight and the key to that door will be available to the least number of relevant persons, such as the pilot and the co-pilot. In 2015, the co-pilot of a Lufthansa

Germanwings plane locked the pilot out of the cockpit while the latter had stepped out to use the restroom, and then flew the plane into the side of a mountain in the French Alps, killing all 150 people on board. The co-pilot had been previously diagnosed to have suicidal tendencies and had been declared “unfit to work” by a German doctor.¹²

The transition to virtual care amplifies the need to have such cautionary information available to concerned administrators for doctors, nurses, pharmacists, and other personnel who work with patients or patient data in hospitals, labs, and other places. Further, such information needs to be available not only within the boundary of a particular hospital, town, or state, but across states and nations too. This paper focuses on medical doctors, and other manuscripts are being developed for other categories of relevant personnel, as well as for ensuring quality and safety of services based on evolving communications and information technologies.

Given that the COVID-19 pandemic led to a significant increase of virtual care and subsequently the loosening of regulation and privacy considerations in this space, it is imperative that SMBs are able to meticulously review virtual healthcare practices. Specifically, it is becoming increasingly necessary to adopt a nationwide framework and to create an appropriate anchor point to serve as the integrator and coordinator of all relevant information related to incidents of improper medical practice. In addition, queries of the federal government’s nationwide National Practitioner Database (NPDB) by state medical boards should be publicly accessible at no charge.

As telemedicine services increasingly surmount state and national borders, such coordination will ultimately need to be provided at a global level. Initially, it can be at the national level for countries such as the U.S. The reluctance of the VA to provide any information on improper medical practices, even to designated state agencies, raises doubts about whether an agency of the federal government should directly play this role. Instead, it could be an independent organization funded by the federal government.

In an integrated system, all the information must be accessible at a single source in an updated manner to ensure proper quality of healthcare and patient safety in the evolving healthcare ecosystem that incorporates virtual care and other innovations.^{10,11} This integration can leverage work done by diverse researchers in different domains, including the first and second authors, on integration of information from a diverse array of heterogeneous information systems, some of which has been embraced by the U.S. Department of Defense. At the international level, the World Health Organization has earlier set up expert committees that came up with unified proposals which were subsequently ratified by individual countries. Other operational models can be considered too, such as

leveraging the experience of inter-country telemedicine in Europe and the associated measures for ensuring patient safety and quality of care.

Conflicts

No conflict of interest

Funding

No external funding received for this research

Contributions

The submitting authors warrant that they are authorized by all co-authors to vouch for the information as true and correct.;

Acknowledgements

The authors are grateful to Dr. Humayun J. Chaudhry, President and CEO, Federation of State Medical Boards, for providing the names and addresses of state medical boards in the U.S., as well as in foreign countries, and for additional insights and updates as this paper was being written. The authors are grateful to individuals on the state medical boards, especially to Kathleen Selzler Lippert, former Executive Director, Kansas Board of Healing Arts, for providing detailed information on how Department of Veterans Affairs limits access to information related to alleged medical malpractice. The authors sincerely appreciate the assistance provided by Maria Chiang Rebatta, Sarah Timmons, and Tserenchimeg Khasgerel on various aspects of the survey and data analysis.

References

1. Fauber J, Wynn M. State medical board failures: 7 takeaways from our investigation. *USA Today*. Updated 2018. Accessed January 12, 2022. <https://www.usatoday.com/story/news/2018/11/30/medical-board-license-discipline-failures-7-takeaways-investigation/2092321002/>
2. DuBois JM, Walsh HAA, Chibnall JT, Anderson EE, Eggers MR, Fowose M, Ziobrowski H. Sexual Violation of Patients by Physicians: A Mixed-Methods, Exploratory Analysis of 101 Cases. *Sexual Abuse*. 2019 Aug;31(5):503-523.
3. Federation of State Medical Boards (FSMB). National Survey Indicates Majority of Physician Misconduct Goes Unreported. Federation of State Medical Boards. Updated 2019. Accessed January 12, 2022. <https://www.fsmb.org/advocacy/news-releases/national-survey-indicates-majority-of-physician-misconduct-goes-unreported/>
4. Health Professional Licensing Reports [Internet]. Tennessee Department of Health. Accessed April 12, 2022. Available from: <https://apps.health.tn.gov/licensurereports>
5. Medical Examining Board Newsletters. State of Wisconsin, Department of Safety and Professional Services. Accessed April 12, 2022. [Dps.wi.gov](https://dps.wi.gov/Pages/BoardsCouncils/MEB/Newsletters.aspx). [cited 2022 April 12]. Available from: <https://dps.wi.gov/Pages/BoardsCouncils/MEB/Newsletters.aspx>
6. Chaudhry, HJ, Robin, LA, Fish, EM, Polk, DH, and Gifford, JD, Improving Access and Mobility — The Interstate Medical Licensure Compact. *N Engl J Med*, 2015;372(17, April 23):1581-3.

7. Cohen IG, Sao D, Gupta A, Gantz DA. Chapter 20: Legal and Regulatory Barriers to Telemedicine in the United States: Public and Private Approaches toward Health Care Reform. In: *The Globalization of Health Care: Legal and Ethical Issues*. Oxford: Oxford University Press; 2013. p. 647–83.
8. Gupta A, Sao D. The Constitutionality of Current Legal Barriers to Telemedicine in the United States: Analysis and Future Directions of Its Relationship to National and International Health Care Reform. *Health Matrix: Journal of Law-Medicine*. 2011;21:385-442.
9. Federation of State Medical Boards (FSMB). Federal Grant Awarded to Expand Interstate Medical Licensure Compact; Support License Portability for PAs. Federation of State Medical Boards. Updated 2019. Accessed January 12, 2022. <https://www.fsmb.org/advocacy/news-releases/federal-grant-awarded-to-expand-interstate-medical-licensure-compact/>
10. Albanese, S, Gupta A, Shah I, Mitri J. Medicare Telehealth Pre and Post-COVID-19: Interstate Framework, Regulations, Licensure, and HIPAA. *Telehealth Med Today*. 2021;6(4). doi: 10.30953/tmt.v6.299
11. Park, L, Russo, H, Gupta A. Enhancing Quality of Healthcare and Patient Safety: Oversight of Physician Assistants, Nurses, and Pharmacists in Era of COVID-19 and Beyond. *Telehealth Med Today*. 2022;7(1).
12. (www.dw.com) DW. Lufthansa Faces Civil Lawsuit on 2015 Germanwings Plane Crash: DW: 06.05.2020 [Internet]. DW.COM. 2020 [cited 2020Nov20]. Available from: <https://www.dw.com/en/lufthansa-faces-civil-lawsuit-on-2015-germanwings-plane-crash/a-53346800>

Copyright Ownership: This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, adapt, enhance this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0>.