

AMERICAN BAR ASSOCIATION

STANDING COMMITTEE ON ETHICS AND PROFESSIONAL RESPONSIBILITY

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Generative Artificial Intelligence Tools

To ensure clients are protected, lawyers using generative artificial intelligence tools must fully consider their applicable ethical obligations, including their duties to provide competent legal representation, to protect client information, to communicate with clients, to supervise their employees and agents, to advance only meritorious claims and contentions, to ensure candor toward the tribunal, and to charge reasonable fees.

I. Introduction

Many lawyers use artificial intelligence (AI) based technologies in their practices to improve the efficiency and quality of legal services to clients.¹ A well-known use is electronic discovery in litigation, in which lawyers use technology-assisted review to categorize vast quantities of documents as responsive or non-responsive and to segregate privileged documents. Another common use is contract analytics, which lawyers use to conduct due diligence in connection with mergers and acquisitions and large corporate transactions. In the realm of analytics, AI also can help lawyers predict how judges might rule on a legal question based on data about the judge's rulings; discover the summary judgment grant rate for every federal district judge; or evaluate how parties and lawyers may behave in current litigation based on their past conduct in similar litigation. And for basic legal research, AI may enhance lawyers' search results.

This opinion discusses a subset of AI technology that has more recently drawn the attention of the legal profession and the world at large – generative AI (GAI), which can create various types of new content, including text, images, audio, video, and software code in response to a user's prompts and questions.² GAI tools that produce new text are prediction tools that generate a statistically probable output when prompted. To accomplish this, these tools analyze large amounts of digital text culled from the internet or proprietary data sources. Some GAI tools are described as “self-learning,” meaning they will learn from themselves as they cull more data. GAI tools may assist lawyers in tasks such as legal research, contract review, due diligence, document review, regulatory compliance, and drafting letters, contracts, briefs, and other legal documents.

¹ There is no single definition of artificial intelligence. At its essence, AI involves computer technology, software, and systems that perform tasks traditionally requiring human intelligence. The ability of a computer or computer-controlled robot to perform tasks commonly associated with intelligent beings is one definition. The term is frequently applied to the project of developing systems that appear to employ or replicate intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience. BRITANNICA, <https://www.britannica.com/technology/artificial-intelligence> (last visited July 12, 2024).

² George Lawton, *What is Generative AI? Everything You Need to Know*, TECHTARGET (July 12, 2024), <https://www.techtargget.com/searchenterpriseai/definition/generative-AI>.

GAI tools—whether general purpose or designed specifically for the practice of law—raise important questions under the ABA Model Rules of Professional Conduct.³ What level of competency should lawyers acquire regarding a GAI tool? How can lawyers satisfy their duty of confidentiality when using a GAI tool that requires input of information relating to a representation? When must lawyers disclose their use of a GAI tool to clients? What level of review of a GAI tool’s process or output is necessary? What constitutes a reasonable fee or expense when lawyers use a GAI tool to provide legal services to clients?

At the same time, as with many new technologies, GAI tools are a moving target—indeed, a *rapidly* moving target—in the sense that their precise features and utility to law practice are quickly changing and will continue to change in ways that may be difficult or impossible to anticipate. This Opinion identifies some ethical issues involving the use of GAI tools and offers general guidance for lawyers attempting to navigate this emerging landscape.⁴ It is anticipated that this Committee and state and local bar association ethics committees will likely offer updated guidance on professional conduct issues relevant to specific GAI tools as they develop.

II. Discussion

A. Competence

Model Rule 1.1 obligates lawyers to provide competent representation to clients.⁵ This duty requires lawyers to exercise the “legal knowledge, skill, thoroughness and preparation reasonably necessary for the representation,” as well as to understand “the benefits and risks associated” with the technologies used to deliver legal services to clients.⁶ Lawyers may ordinarily achieve the requisite level of competency by engaging in self-study, associating with another competent lawyer, or consulting with an individual who has sufficient expertise in the relevant field.⁷

To competently use a GAI tool in a client representation, lawyers need not become GAI experts. Rather, lawyers must have a reasonable understanding of the capabilities and limitations

³ Many of the professional responsibility concerns that arise with GAI tools are similar to the issues that exist with other AI tools and should be considered by lawyers using such technology.

⁴ This opinion is based on the ABA Model Rules of Professional Conduct as amended by the ABA House of Delegates through August 2023. The Opinion addresses several imminent ethics issues associated with the use of GAI, but additional issues may surface, including those found in Model Rule 7.1 (“Communications Concerning a Lawyer’s Services”), Model Rule 1.7 (“Conflict of Interest: Current Clients”), and Model Rule 1.9 (“Duties to Former Clients”). See, e.g., Fla. State Bar Ass’n, Prof’l Ethics Comm. Op. 24-1, at 7 (2024) (discussing the use of GAI chatbots under Florida Rule 4-7.13, which prohibits misleading content and unduly manipulative or intrusive advertisements); Pa. State Bar Ass’n Comm. on Legal Ethics & Prof’l Resp. & Philadelphia Bar Ass’n Prof’l Guidance Comm. Joint Formal Op. 2024-200 [hereinafter Pa. & Philadelphia Joint Formal Opinion 2024-200], at 10 (2024) (“Because the large language models used in generative AI continue to develop, some without safeguards similar to those already in use in law offices, such as ethical walls, they may run afoul of Rules 1.7 and 1.9 by using the information developed from one representation to inform another.”). Accordingly, lawyers should consider all rules before using GAI tools.

⁵ MODEL RULES OF PROF’L CONDUCT R. 1.1 (2023) [hereinafter MODEL RULES].

⁶ MODEL RULES R. 1.1 & cmt. [8]. See also ABA Comm. on Ethics & Prof’l Responsibility, Formal Op. 477R, at 2–3 (2017) [hereinafter ABA Formal Op. 477R] (discussing the ABA’s “technology amendments” made to the Model Rules in 2012).

⁷ MODEL RULES R. 1.1 cmts. [1], [2] & [4]; Cal. St. Bar, Comm. Prof’l Resp. Op. 2015-193, 2015 WL 4152025, at *2–3 (2015).

of the specific GAI technology that the lawyer might use. This means that lawyers should either acquire a reasonable understanding of the benefits and risks of the GAI tools that they employ in their practices or draw on the expertise of others who can provide guidance about the relevant GAI tool's capabilities and limitations.⁸ This is not a static undertaking. Given the fast-paced evolution of GAI tools, technological competence presupposes that lawyers remain vigilant about the tools' benefits and risks.⁹ Although there is no single right way to keep up with GAI developments, lawyers should consider reading about GAI tools targeted at the legal profession, attending relevant continuing legal education programs, and, as noted above, consulting others who are proficient in GAI technology.¹⁰

With the ability to quickly create new, seemingly human-crafted content in response to user prompts, GAI tools offer lawyers the potential to increase the efficiency and quality of their legal services to clients. Lawyers must recognize inherent risks, however.¹¹ One example is the risk of producing inaccurate output, which can occur in several ways. The large language models underlying GAI tools use complex algorithms to create fluent text, yet GAI tools are only as good as their data and related infrastructure. If the quality, breadth, and sources of the underlying data on which a GAI tool is trained are limited or outdated or reflect biased content, the tool might produce unreliable, incomplete, or discriminatory results. In addition, the GAI tools lack the ability to understand the meaning of the text they generate or evaluate its context.¹² Thus, they may combine otherwise accurate information in unexpected ways to yield false or inaccurate results.¹³ Some GAI tools are also prone to "hallucinations," providing ostensibly plausible responses that have no basis in fact or reality.¹⁴

Because GAI tools are subject to mistakes, lawyers' uncritical reliance on content created by a GAI tool can result in inaccurate legal advice to clients or misleading representations to courts and third parties. Therefore, a lawyer's reliance on, or submission of, a GAI tool's output—without

⁸ Pa. Bar Ass'n, Comm. on Legal Ethics & Prof'l Resp. Op. 2020-300, 2020 WL 2544268, at *2–3 (2020). *See also* Cal. State Bar, Standing Comm. on Prof'l Resp. & Conduct Op. 2023-208, 2023 WL 4035467, at *2 (2023) adopting a "reasonable efforts standard" and "fact-specific approach" to a lawyer's duty of technology competence, citing ABA Formal Opinion 477R, at 4).

⁹ *See* New York County Lawyers Ass'n Prof'l Ethics Comm. Op. 749 (2017) (emphasizing that "[l]awyers must be responsive to technological developments as they become integrated into the practice of law"); Cal. St. Bar, Comm. Prof'l Resp. Op. 2015-193, 2015 WL 4152025, at *1 (2015) (discussing the level of competence required for lawyers to handle e-discovery issues in litigation).

¹⁰ MODEL RULES R. 1.1 cmt. [8]; *see* Melinda J. Bentley, *The Ethical Implications of Technology in Your Law Practice: Understanding the Rules of Professional Conduct Can Prevent Potential Problems*, 76 J. MO. BAR 1 (2020) (identifying ways for lawyers to acquire technology competence skills).

¹¹ As further detailed in this opinion, lawyers' use of GAI raises confidentiality concerns under Model Rule 1.6 due to the risk of disclosure of, or unauthorized access to, client information. GAI also poses complex issues relating to ownership and potential infringement of intellectual property rights and even potential data security threats.

¹² *See*, W. Bradley Wendel, *The Promise and Limitations of AI in the Practice of Law*, 72 OKLA. L. REV. 21, 26 (2019) (discussing the limitations of AI based on an essential function of lawyers, making normative judgments that are impossible for AI).

¹³ *See, e.g.*, Karen Weise & Cade Metz, *When A.I. Chatbots Hallucinate*, N.Y. TIMES (May 1, 2023).

¹⁴ Ivan Moreno, *AI Practices Law 'At the Speed of Machines.' Is it Worth It?*, LAW360 (June 7, 2023); *See* Varun Magesh, Faiz Surani, Matthew Dahl, Mirac Suzgun, Christopher D. Manning, & Daniel E. Ho, *Hallucination Free? Assessing the Reliability of Leading AI Legal Research Tools*, STANFORD UNIVERSITY (June 26, 2024), available at https://dho.stanford.edu/wp-content/uploads/Legal_RAG_Hallucinations.pdf (study finding leading legal research companies' GAI systems "hallucinate between 17% and 33% of the time").

an appropriate degree of independent verification or review of its output—could violate the duty to provide competent representation as required by Model Rule 1.1.¹⁵ While GAI tools may be able to significantly assist lawyers in serving clients, they cannot replace the judgment and experience necessary for lawyers to competently advise clients about their legal matters or to craft the legal documents or arguments required to carry out representations.

The appropriate amount of independent verification or review required to satisfy Rule 1.1 will necessarily depend on the GAI tool and the specific task that it performs as part of the lawyer's representation of a client. For example, if a lawyer relies on a GAI tool to review and summarize numerous, lengthy contracts, the lawyer would not necessarily have to manually review the entire set of documents to verify the results if the lawyer had previously tested the accuracy of the tool on a smaller subset of documents by manually reviewing those documents, comparing then to the summaries produced by the tool, and finding the summaries accurate. Moreover, a lawyer's use of a GAI tool designed specifically for the practice of law or to perform a discrete legal task, such as generating ideas, may require less independent verification or review, particularly where a lawyer's prior experience with the GAI tool provides a reasonable basis for relying on its results.

While GAI may be used as a springboard or foundation for legal work—for example, by generating an analysis on which a lawyer bases legal advice, or by generating a draft from which a lawyer produces a legal document—lawyers may not abdicate their responsibilities by relying solely on a GAI tool to perform tasks that call for the exercise of professional judgment. For example, lawyers may not leave it to GAI tools alone to offer legal advice to clients, negotiate clients' claims, or perform other functions that require a lawyer's personal judgment or participation.¹⁶ Competent representation presupposes that lawyers will exercise the requisite level of skill and judgment regarding all legal work. In short, regardless of the level of review the lawyer selects, the lawyer is fully responsible for the work on behalf of the client.

Emerging technologies may provide an output that is of distinctively higher quality than current GAI tools produce, or may enable lawyers to perform work markedly faster and more economically, eventually becoming ubiquitous in legal practice and establishing conventional expectations regarding lawyers' duty of competence.¹⁷ Over time, other new technologies have become integrated into conventional legal practice in this manner.¹⁸ For example, “a lawyer would have difficulty providing competent legal services in today's environment without knowing how

¹⁵ See generally ABA Comm. on Ethics & Prof'l Responsibility, Formal Op. 08-451, at 1 (2008) [hereinafter ABA Formal Op. 08-451] (concluding that “[a] lawyer may outsource legal or nonlegal support services provided the lawyer remains ultimately responsible for rendering competent legal services to the client under Model Rule 1.1”).

¹⁶ See Fla. State Bar Ass'n, Prof'l Ethics Comm. Op. 24-1, *supra* note 4.

¹⁷ See, e.g., Sharon Bradley, *Rule 1.1 Duty of Competency and Internet Research: Benefits and Risks Associated with Relevant Technology* at 7 (2019), available at <https://ssrn.com/abstract=3485055> (“View Model Rule 1.1 as elastic. It is expanding as legal technology solutions expand. The ever-changing shape of this rule makes clear that a lawyer cannot simply learn technology today and never again update their skills or knowledge.”).

¹⁸ See, e.g., *Smith v. Lewis*, 530 P.2d 589, 595 (Cal. 1975) (stating that a lawyer is expected “to possess knowledge of those plain and elementary principles of law which are commonly known by well-informed attorneys, and to discover those additional rules of law which, although not commonly known, may readily be found by *standard research techniques*”) (emphasis added); *Hagopian v. Justice Admin. Comm'n*, 18 So. 3d 625, 642 (Fla. Dist. Ct. App. 2009) (observing that lawyers have “become expected to use computer-assisted legal research to ensure that their research is complete and up-to-date, but the costs of this service can be significant”).

to use email or create an electronic document.”¹⁹ Similar claims might be made about other tools such as computerized legal research or internet searches.²⁰ As GAI tools continue to develop and become more widely available, it is conceivable that lawyers will eventually have to use them to competently complete certain tasks for clients.²¹ But even in the absence of an expectation for lawyers to use GAI tools as a matter of course,²² lawyers should become aware of the GAI tools relevant to their work so that they can make an informed decision, as a matter of professional judgment, whether to avail themselves of these tools or to conduct their work by other means.²³ As previously noted regarding the possibility of outsourcing certain work, “[t]here is no unique blueprint for the provision of competent legal services. Different lawyers may perform the same tasks through different means, all with the necessary ‘legal knowledge, skill, thoroughness and preparation.’”²⁴ Ultimately, any informed decision about whether to employ a GAI tool must consider the client’s interests and objectives.²⁵

¹⁹ ABA Formal Op. 477R, *supra* note 6, at 3 (quoting ABA COMMISSION ON ETHICS 20/20 REPORT 105A (Aug. 2012)).

²⁰ See, e.g., Bradley, *supra* note 17, at 3 (“Today no competent lawyer would rely solely upon a typewriter to draft a contract, brief, or memo. Typewriters are no longer part of ‘methods and procedures’ used by competent lawyers.”); Lawrence Duncan MacLachlan, *Gandy Dancers on the Web: How the Internet Has Raised the Bar on Lawyers’ Professional Responsibility to Research and Know the Law*, 13 GEO. J. LEGAL ETHICS 607, 608 (2000) (“The lawyer in the twenty-first century who does not effectively use the Internet for legal research may fall short of the minimal standards of professional competence and be potentially liable for malpractice”); Ellie Margolis, *Surfin’ Safari—Why Competent Lawyers Should Research on the Web*, 10 YALE J.L. & TECH. 82, 110 (2007) (“While a lawyer’s research methods reveal a great deal about the competence of the research, the method of research is ultimately a secondary inquiry, only engaged in when the results of that research process is judged inadequate. A lawyer who provides the court with adequate controlling authority is not going to be judged incompetent whether she found that authority in print, electronically, or by any other means.”); Michael Thomas Murphy, *The Search for Clarity in an Attorney’s Duty to Google*, 18 LEGAL COMM. & RHETORIC: JALWD 133, 133 (2021) (“This Duty to Google contemplates that certain readily available information on the public Internet about a legal matter is so easily accessible that it must be discovered, collected, and examined by an attorney, or else that attorney is acting unethically, committing malpractice, or both”); Michael Whiteman, *The Impact of the Internet and Other Electronic Sources on an Attorney’s Duty of Competence Under the Rules of Professional Conduct*, 11 ALB. L.J. SCI. & TECH. 89, 91 (2000) (“Unless it can be shown that the use of electronic sources in legal research has become a standard technique, then lawyers who fail to use electronic sources will not be deemed unethical or negligent in his or her failure to use such tools.”).

²¹ See MODEL RULES R. 1.1 cmt. [5] (stating that “[c]ompetent handling of a particular matter includes . . . [the] use of methods and procedures meeting the standards of competent practitioners”); New York County Lawyers Ass’n Prof’l Ethics Comm. Op. 749, 2017 WL 11659554, at *3 (2017) (explaining that the duty of competence covers not only substantive knowledge in different areas of the law, but also the manner in which lawyers provide legal services to clients).

²² The establishment of such an expectation would likely require an increased acceptance of GAI tools across the legal profession, a track record of reliable results from those platforms, the widespread availability of these technologies to lawyers from a cost or financial standpoint, and robust client demand for GAI tools as an efficiency or cost-cutting measure.

²³ Model Rule 1.5’s prohibition on unreasonable fees, as well as market forces, may influence lawyers to use new technology in favor of slower or less efficient methods.

²⁴ ABA Formal Op. 08-451, *supra* note 15, at 2. See also *id.* (“Rule 1.1 does not require that tasks be accomplished in any special way. The rule requires only that the lawyer who is responsible to the client satisfies her obligation to render legal services competently.”).

²⁵ MODEL RULES R. 1.2(a).

B. Confidentiality

A lawyer using GAI must be cognizant of the duty under Model Rule 1.6 to keep confidential all information relating to the representation of a client, regardless of its source, unless the client gives informed consent, disclosure is impliedly authorized to carry out the representation, or disclosure is permitted by an exception.²⁶ Model Rules 1.9(c) and 1.18(b) require lawyers to extend similar protections to former and prospective clients' information. Lawyers also must make "reasonable efforts to prevent the inadvertent or unauthorized disclosure of, or unauthorized access to, information relating to the representation of the client."²⁷

Generally, the nature and extent of the risk that information relating to a representation may be revealed depends on the facts. In considering whether information relating to any representation is adequately protected, lawyers must assess the likelihood of disclosure and unauthorized access, the sensitivity of the information,²⁸ the difficulty of implementing safeguards, and the extent to which safeguards negatively impact the lawyer's ability to represent the client.²⁹

Before lawyers input information relating to the representation of a client into a GAI tool, they must evaluate the risks that the information will be disclosed to or accessed by others outside the firm. Lawyers must also evaluate the risk that the information will be disclosed to or accessed by others *inside* the firm who will not adequately protect the information from improper disclosure or use³⁰ because, for example, they are unaware of the source of the information and that it originated with a client of the firm. Because GAI tools now available differ in their ability to ensure that information relating to the representation is protected from impermissible disclosure and access, this risk analysis will be fact-driven and depend on the client, the matter, the task, and the GAI tool used to perform it.³¹

Self-learning GAI tools into which lawyers input information relating to the representation, by their very nature, raise the risk that information relating to one client's representation may be disclosed improperly,³² even if the tool is used exclusively by lawyers at the same firm.³³ This can occur when information relating to one client's representation is input into the tool, then later revealed in response to prompts by lawyers working on other matters, who then share that output with other clients, file it with the court, or otherwise disclose it. In other words, the self-learning

²⁶ MODEL RULES R. 1.6; MODEL RULES R. 1.6 cmt. [3].

²⁷ MODEL RULES R. 1.6(c).

²⁸ ABA Formal Op. 477R, *supra* note 6, at 1 (A lawyer "may be required to take special security precautions to protect against the inadvertent or unauthorized disclosure of client information when ... the nature of the information requires a higher degree of security.").

²⁹ MODEL RULES R. 1.6, cmt. [18].

³⁰ See MODEL RULES R. 1.8(b), which prohibits use of information relating to the representation of a client to the disadvantage of the client.

³¹ See ABA Formal Op. 477R, *supra* note 6, at 4 (rejecting specific security measures to protect information relating to a client's representation and advising lawyers to adopt a fact-specific approach to data security).

³² See *generally* State Bar of Cal. Standing Comm. on Prof'l Resp. & Conduct, PRACTICAL GUIDANCE FOR THE USE OF GENERATIVE ARTIFICIAL INTELLIGENCE IN THE PRACTICE OF LAW (2024), *available at* <https://www.calbar.ca.gov/Portals/0/documents/ethics/Generative-AI-Practical-Guidance.pdf>; Fla. State Bar Ass'n, Prof'l Ethics Comm. Op. 24-1, *supra* note 4.

³³ See Pa. & Philadelphia Joint Formal Opinion 2024-200, *supra* note 4, at 10 (noting risk that information relating to one representation may be used to inform work on another representation).

GAI tool may disclose information relating to the representation to persons outside the firm who are using the same GAI tool. Similarly, it may disclose information relating to the representation to persons in the firm (1) who either are prohibited from access to said information because of an ethical wall or (2) who could inadvertently use the information from one client to help another client, not understanding that the lawyer is revealing client confidences. Accordingly, because many of today's self-learning GAI tools are designed so that their output could lead directly or indirectly to the disclosure of information relating to the representation of a client, a client's informed consent is required prior to inputting information relating to the representation into such a GAI tool.³⁴

When consent is required, it must be informed. For the consent to be informed, the client must have the lawyer's best judgment about why the GAI tool is being used, the extent of and specific information about the risk, including particulars about the kinds of client information that will be disclosed, the ways in which others might use the information against the client's interests, and a clear explanation of the GAI tool's benefits to the representation. Part of informed consent requires the lawyer to explain the extent of the risk that later users or beneficiaries of the GAI tool will have access to information relating to the representation. To obtain informed consent when using a GAI tool, merely adding general, boiler-plate provisions to engagement letters purporting to authorize the lawyer to use GAI is not sufficient.³⁵

Because of the uncertainty surrounding GAI tools' ability to protect such information and the uncertainty about what happens to information both at input and output, it will be difficult to evaluate the risk that information relating to the representation will either be disclosed to or accessed by others inside the firm to whom it should not be disclosed as well as others outside the firm.³⁶ As a baseline, all lawyers should read and understand the Terms of Use, privacy policy, and related contractual terms and policies of any GAI tool they use to learn who has access to the information that the lawyer inputs into the tool or consult with a colleague or external expert who has read and analyzed those terms and policies.³⁷ Lawyers may need to consult with IT professionals or cyber security experts to fully understand these terms and policies as well as the manner in which GAI tools utilize information.

Today, there are uses of self-learning GAI tools in connection with a legal representation when client informed consent is not required because the lawyer will not be inputting information relating to the representation. As an example, if a lawyer is using the tool for idea generation in a manner that does not require inputting information relating to the representation, client informed consent would not be necessary.

³⁴ This conclusion is based on the risks and capabilities of GAI tools as of the publication of this opinion. As the technology develops, the risks may change in ways that would alter our conclusion. See Fla. State Bar Ass'n, Prof'l Ethics Comm. Op. 24-1, *supra* note 4, at 2; W. Va. Lawyer Disciplinary Bd. Op. 24-01 (2024), available at <http://www.wvdc.org/pdf/AILEO24-01.pdf>.

³⁵ See W. Va. Lawyer Disciplinary Bd. Op. 24-01, *supra* note 34.

³⁶ Magesh et al. *supra* note 14, at 23 (describing some of the GAI tools available to lawyers as "difficult for lawyers to assess when it is safe to trust them. Official documentation does not clearly illustrate what they can do for lawyers and in which areas lawyers should exercise caution.")

³⁷ Stephanie Pacheco, *Three Considerations for Attorneys Using Generative AI*, BLOOMBERG LAW ANALYSIS (June 16, 2023, 4:00 pm), <https://news.bloomberglaw.com/bloomberg-law-analysis/analysis-three-considerations-for-attorneys-using-generative-ai?context=search&index=7>.

C. Communication

Where Model Rule 1.6 does not require disclosure and informed consent, the lawyer must separately consider whether other Model Rules, particularly Model Rule 1.4, require disclosing the use of a GAI tool in the representation.

Model Rule 1.4, which addresses lawyers' duty to communicate with their clients, builds on lawyers' legal obligations as fiduciaries, which include "the duty of an attorney to advise the client promptly whenever he has any information to give which it is important the client should receive."³⁸ Of particular relevance, Model Rule 1.4(a)(2) states that a lawyer shall "reasonably consult with the client about the means by which the client's objectives are to be accomplished." Additionally, Model Rule 1.4(b) obligates lawyers to explain matters "to the extent reasonably necessary to permit a client to make an informed decision regarding the representation." Comment [5] to Rule 1.4 explains, "the lawyer should fulfill reasonable client expectations for information consistent with the duty to act in the client's best interests, and the client's overall requirements as to the character of representation." Considering these underlying principles, questions arise regarding whether and when lawyers might be required to disclose their use of GAI tools to clients pursuant to Rule 1.4.

The facts of each case will determine whether Model Rule 1.4 requires lawyers to disclose their GAI practices to clients or obtain their informed consent to use a particular GAI tool. Depending on the circumstances, client disclosure may be unnecessary.

Of course, lawyers must disclose their GAI practices if asked by a client how they conducted their work, or whether GAI technologies were employed in doing so, or if the client expressly requires disclosure under the terms of the engagement agreement or the client's outside counsel guidelines.³⁹ There are also situations where Model Rule 1.4 requires lawyers to discuss their use of GAI tools unprompted by the client.⁴⁰ For example, as discussed in the previous section, clients would need to be informed in advance, and to give informed consent, if the lawyer proposes to input information relating to the representation into the GAI tool.⁴¹ Lawyers must also consult clients when the use of a GAI tool is relevant to the basis or reasonableness of a lawyer's fee.⁴²

Client consultation about the use of a GAI tool is also necessary when its output will influence a significant decision in the representation,⁴³ such as when a lawyer relies on GAI

³⁸ *Baker v. Humphrey*, 101 U.S. 494, 500 (1879).

³⁹ *See, e.g.*, MODEL RULES R. 1.4(a)(4) ("A lawyer shall . . . promptly comply with reasonable requests for information[.]").

⁴⁰ *See* MODEL RULES R. 1.4(a)(1) (requiring lawyers to "promptly inform the client of any decision or circumstance with respect to which the client's informed consent" is required by the rules of professional conduct).

⁴¹ *See* section B for a discussion of confidentiality issues under Rule 1.6.

⁴² *See* section F for a discussion of fee issues under Rule 1.5.

⁴³ Guidance may be found in ethics opinions requiring lawyers to disclose their use of temporary lawyers whose involvement is significant or otherwise material to the representation. *See, e.g.*, Va. State Bar Legal Ethics Op. 1850, 2010 WL 5545407, at *5 (2010) (acknowledging that "[t]here is little purpose to informing a client every time a lawyer outsources legal support services that are truly tangential, clerical, or administrative in nature, or even when basic legal research or writing is outsourced without any client confidences being revealed"); Cal. State Bar, Standing Comm. on Prof'l Resp. & Conduct Op. 2004-165, 2004 WL 3079030, at *2-3 (2004) (opining that a

technology to evaluate potential litigation outcomes or jury selection. A client would reasonably want to know whether, in providing advice or making important decisions about how to carry out the representation, the lawyer is exercising independent judgment or, in the alternative, is deferring to the output of a GAI tool. Or there may be situations where a client retains a lawyer based on the lawyer's particular skill and judgment, when the use of a GAI tool, without the client's knowledge, would violate the terms of the engagement agreement or the client's reasonable expectations regarding how the lawyer intends to accomplish the objectives of the representation.

It is not possible to catalogue every situation in which lawyers must inform clients about their use of GAI. Again, lawyers should consider whether the specific circumstances warrant client consultation about the use of a GAI tool, including the client's needs and expectations, the scope of the representation, and the sensitivity of the information involved. Potentially relevant considerations include the GAI tool's importance to a particular task, the significance of that task to the overall representation, how the GAI tool will process the client's information, and the extent to which knowledge of the lawyer's use of the GAI tool would affect the client's evaluation of or confidence in the lawyer's work.

Even when Rule 1.6 does not require informed consent and Rule 1.4 does not require a disclosure regarding the use of GAI, lawyers may tell clients how they employ GAI tools to assist in the delivery of legal services. Explaining this may serve the interest of effective client communication. The engagement agreement is a logical place to make such disclosures and to identify any client instructions on the use of GAI in the representation.⁴⁴

D. Meritorious Claims and Contentions and Candor Toward the Tribunal

Lawyers using GAI in litigation have ethical responsibilities to the courts as well as to clients. Model Rules 3.1, 3.3, and 8.4(c) may be implicated by certain uses. Rule 3.1 states, in part, that "[a] lawyer shall not bring or defend a proceeding, or assert or controvert and issue therein, unless there is a basis in law or fact for doing so that is not frivolous." Rule 3.3 makes it clear that lawyers cannot knowingly make any false statement of law or fact to a tribunal or fail to correct a material false statement of law or fact previously made to a tribunal.⁴⁵ Rule 8.4(c) provides that a

lawyer must disclose the use of a temporary lawyer to a client where the temporary lawyer's use constitutes a "significant development" in the matter and listing relevant considerations); N.Y. State Bar Ass'n, Comm on Prof'l Ethics 715, at 7 (1999) (opining that "whether a law firm needs to disclose to the client and obtain client consent for the participation of a Contract lawyer depends upon whether client confidences will be disclosed to the lawyer, the degree of involvement of the lawyer in the matter, and the significance of the work done by the lawyer"); D.C. Bar Op. 284, at 4 (1988) (recommending client disclosure "whenever the proposed use of a temporary lawyer to perform work on the client's matter appears reasonably likely to be material to the representation or to affect the client's reasonable expectations"); Fla. State Bar Ass'n, Comm. on Prof'l Ethics Op. 88-12, 1988 WL 281590, at *2 (1988) (stating that disclosure of a temporary lawyer depends "on whether the client would likely consider the information material");.

⁴⁴ For a discussion of what client notice and informed consent under Rule 1.6 may require, see section B.

⁴⁵ MODEL RULES R. 3.3(a) reads: "A lawyer shall not knowingly: (1) make a false statement of fact or law to a tribunal or fail to correct a false statement of material fact or law previously made to the tribunal by the lawyer; (2) fail to disclose to the tribunal legal authority in the controlling jurisdiction known to the lawyer to be directly adverse to the position of the client and not disclosed by opposing counsel; or (3) offer evidence that the lawyer knows to be false. If a lawyer, the lawyer's client, or a witness called by the lawyer, has offered material evidence and the lawyer comes to know of its falsity, the lawyer shall take reasonable remedial measures, including, if

lawyer shall not engage in “conduct involving dishonesty, fraud, deceit or misrepresentation.” Even an unintentional misstatement to a court can involve a misrepresentation under Rule 8.4(c). Therefore, output from a GAI tool must be carefully reviewed to ensure that the assertions made to the court are not false.

Issues that have arisen to date with lawyers’ use of GAI outputs include citations to nonexistent opinions, inaccurate analysis of authority, and use of misleading arguments.⁴⁶

Some courts have responded by requiring lawyers to disclose their use of GAI.⁴⁷ As a matter of competence, as previously discussed, lawyers should review for accuracy all GAI outputs. In judicial proceedings, duties to the tribunal likewise require lawyers, before submitting materials to a court, to review these outputs, including analysis and citations to authority, and to correct errors, including misstatements of law and fact, a failure to include controlling legal authority, and misleading arguments.

E. Supervisory Responsibilities

Model Rules 5.1 and 5.3 address the ethical duties of lawyers charged with managerial and supervisory responsibilities and set forth those lawyers’ responsibilities with regard to the firm, subordinate lawyers, and nonlawyers. Managerial lawyers must create effective measures to ensure that all lawyers in the firm conform to the rules of professional conduct,⁴⁸ and supervisory lawyers must supervise subordinate lawyers and nonlawyer assistants to ensure that subordinate lawyers and nonlawyer assistants conform to the rules.⁴⁹ These responsibilities have implications for the use of GAI tools by lawyers and nonlawyers.

Managerial lawyers must establish clear policies regarding the law firm’s permissible use of GAI, and supervisory lawyers must make reasonable efforts to ensure that the firm’s lawyers and nonlawyers comply with their professional obligations when using GAI tools.⁵⁰ Supervisory obligations also include ensuring that subordinate lawyers and nonlawyers are trained,⁵¹ including in the ethical and practical use of the GAI tools relevant to their work as well as on risks associated with relevant GAI use.⁵² Training could include the basics of GAI technology, the capabilities and limitations of the tools, ethical issues in use of GAI and best practices for secure data handling, privacy, and confidentiality.

necessary, disclosure to the tribunal. A lawyer may refuse to offer evidence, other than the testimony of a defendant in a criminal matter, that the lawyer reasonably believes is false.”

⁴⁶ See DC Bar Op. 388 (2024).

⁴⁷ Lawyers should consult with the applicable court’s local rules to ensure that they comply with those rules with respect to AI use. As noted in footnote 4, no one opinion could address every ethics issue presented when a lawyer uses GAI. For example, depending on the facts, issues relating to Model Rule 3.4(c) could be presented.

⁴⁸ See MODEL RULES R. 1.0(c) for the definition of firm.

⁴⁹ ABA Formal Op. 08-451, *supra* note 15.

⁵⁰ MODEL RULES R. 5.1.

⁵¹ See ABA Comm. on Ethics & Prof’l Responsibility, Formal Op. 467 (2014).

⁵² See *generally*, MODEL RULES R. 1.1, cmt. [8]. One training suggestion is that all materials produced by GAI tools be marked as such when stored in any client or firm file so future users understand potential fallibility of the work.

Lawyers have additional supervisory obligations insofar as they rely on others outside the law firm to employ GAI tools in connection with the legal representation. Model Rule 5.3(b) imposes a duty on lawyers with direct supervisory authority over a nonlawyer to make “reasonable efforts to ensure that” the nonlawyer’s conduct conforms with the professional obligations of the lawyer. Earlier opinions recognize that when outsourcing legal and nonlegal services to third-party providers, lawyers must ensure, for example, that the third party will do the work capably and protect the confidentiality of information relating to the representation.⁵³ These opinions note the importance of: reference checks and vendor credentials; understanding vendor’s security policies and protocols; familiarity with vendor’s hiring practices; using confidentiality agreements; understanding the vendor’s conflicts check system to screen for adversity among firm clients; and the availability and accessibility of a legal forum for legal relief for violations of the vendor agreement. These concepts also apply to GAI providers and tools.

Earlier opinions regarding technological innovations and other innovations in legal practice are instructive when considering a lawyer’s use of a GAI tool that requires the disclosure and storage of information relating to the representation.⁵⁴ In particular, opinions developed to address cloud computing and outsourcing of legal and nonlegal services suggest that lawyers should:

- ensure that the [GAI tool] is configured to preserve the confidentiality and security of information, that the obligation is enforceable, and that the lawyer will be notified in the event of a breach or service of process regarding production of client information;⁵⁵
- investigate the [GAI tool’s] reliability, security measures, and policies, including limitations on the [the tool’s] liability;⁵⁶
- determine whether the [GAI tool] retains information submitted by the lawyer before and after the discontinuation of services or asserts proprietary rights to the information;⁵⁷ and
- understand the risk that [GAI tool servers] are subject to their own failures and may be an attractive target of cyber-attacks.⁵⁸

F. Fees

Model Rule 1.5, which governs lawyers’ fees and expenses, applies to representations in which a lawyer charges the client for the use of GAI. Rule 1.5(a) requires a lawyer’s fees and expenses to be reasonable and includes a non-exclusive list of criteria for evaluating whether a fee

⁵³ ABA Formal Op. 08-451, *supra* note 15; ABA Formal. Op. 477R, *supra* note 6.

⁵⁴ See ABA Formal Op. 08-451, *supra* note 15.

⁵⁵ Fla. Bar Advisory Op. 12-3 (2013).

⁵⁶ *Id.* citing Iowa State Bar Ass’n Comm. on Ethics & Practice Guidelines Op. 11-01 (2011) [hereinafter Iowa Ethics Opinion 11-01].

⁵⁷ Fla. Bar Advisory Op. 24-1, *supra* note 4; Fla. Bar Advisory Op. 12-3, *supra* note 55; Iowa Ethics Opinion 11-01, *supra* note 56.

⁵⁸ Fla. Bar Advisory Op. 12-3, *supra* note 55; See generally Melissa Heikkila, *Three Ways AI Chatbots are a Security Disaster*, MIT TECHNOLOGY REVIEW (Apr. 3, 2023), www.technologyreview.com/2023/04/03/1070893/three-ways-ai-chatbots-are-a-security-disaster/.

or expense is reasonable.⁵⁹ Rule 1.5(b) requires a lawyer to communicate to a client the basis on which the lawyer will charge for fees and expenses unless the client is a regularly represented client and the terms are not changing. The required information must be communicated before or within a reasonable time of commencing the representation, preferably in writing. Therefore, before charging the client for the use of the GAI tools or services, the lawyer must explain the basis for the charge, preferably in writing.

GAI tools may provide lawyers with a faster and more efficient way to render legal services to their clients, but lawyers who bill clients an hourly rate for time spent on a matter must bill for their actual time. ABA Formal Ethics Opinion 93-379 explained, “the lawyer who has agreed to bill on the basis of hours expended does not fulfill her ethical duty if she bills the client for more time than she has actually expended on the client’s behalf.”⁶⁰ If a lawyer uses a GAI tool to draft a pleading and expends 15 minutes to input the relevant information into the GAI program, the lawyer may charge for the 15 minutes as well as for the time the lawyer expends to review the resulting draft for accuracy and completeness. As further explained in Opinion 93-379, “If a lawyer has agreed to charge the client on [an hourly] basis and it turns out that the lawyer is particularly efficient in accomplishing a given result, it nonetheless will not be permissible to charge the client for more hours than were actually expended on the matter,”⁶¹ because “[t]he client should only be charged a reasonable fee for the legal services performed.”⁶² The “goal should be solely to compensate the lawyer fully for time reasonably expended, an approach that if followed will not take advantage of the client.”⁶³

The factors set forth in Rule 1.5(a) also apply when evaluating the reasonableness of charges for GAI tools when the lawyer and client agree on a flat or contingent fee.⁶⁴ For example, if using a GAI tool enables a lawyer to complete tasks much more quickly than without the tool, it may be unreasonable under Rule 1.5 for the lawyer to charge the same flat fee when using the GAI tool as when not using it. “A fee charged for which little or no work was performed is an unreasonable fee.”⁶⁵

The principles set forth in ABA Formal Opinion 93-379 also apply when a lawyer charges GAI work as an expense. Rule 1.5(a) requires that disbursements, out-of-pocket expenses, or additional charges be reasonable. Formal Opinion 93-379 explained that a lawyer may charge the

⁵⁹ The listed considerations are (1) the time and labor required, the novelty and difficulty of the questions involved, and the skill requisite to perform the legal service properly; (2) the likelihood, if apparent to the client, that the acceptance of the particular employment will preclude other employment by the lawyer; (3) the fee customarily charged in the locality for similar legal services; (4) the amount involved and the results obtained; (5) the time limitations imposed by the client or by the circumstances; (6) the nature and length of the professional relationship with the client; (7) the experience, reputation, and ability of the lawyer or lawyers performing the services; and (8) whether the fee is fixed or contingent.

⁶⁰ ABA Comm. on Ethics & Prof’l Responsibility, Formal Op. 93-379, at 6 (1993) [hereinafter ABA Formal Op. 93-379].

⁶¹ *Id.*

⁶² *Id.* at 5.

⁶³ *Id.*

⁶⁴ See, e.g., *Williams Cos. v. Energy Transfer LP*, 2022 Del. Ch. LEXIS 207, 2022 WL 3650176 (Del. Ch. Aug. 25, 2022) (applying same principles to contingency fee).

⁶⁵ Att’y Grievance Comm’n v. Monfried, 794 A.2d 92, 103 (Md. 2002) (finding that a lawyer violated Rule 1.5 by charging a flat fee of \$1,000 for which the lawyer did little or no work).

client for disbursements incurred in providing legal services to the client. For example, a lawyer typically may bill to the client the actual cost incurred in paying a court reporter to transcribe a deposition or the actual cost to travel to an out-of-town hearing.⁶⁶ Absent contrary disclosure to the client, the lawyer should not add a surcharge to the actual cost of such expenses and should pass along to the client any discounts the lawyer receives from a third-party provider.⁶⁷ At the same time, lawyers may not bill clients for general office overhead expenses including the routine costs of “maintaining a library, securing malpractice insurance, renting of office space, purchasing utilities, and the like.”⁶⁸ Formal Opinion 93-379 noted, “[i]n the absence of disclosure to a client in advance of the engagement to the contrary,” such overhead should be “subsumed within” the lawyer’s charges for professional services.⁶⁹

In applying the principles set out in ABA Formal Ethics Opinion 93-379 to a lawyer’s use of a GAI tool, lawyers should analyze the characteristics and uses of each GAI tool, because the types, uses, and cost of GAI tools and services vary significantly. To the extent a particular tool or service functions similarly to equipping and maintaining a legal practice, a lawyer should consider its cost to be overhead and not charge the client for its cost absent a contrary disclosure to the client in advance. For example, when a lawyer uses a GAI tool embedded in or added to the lawyer’s word processing software to check grammar in documents the lawyer drafts, the cost of the tool should be considered to be overhead. In contrast, when a lawyer uses a third-party provider’s GAI service to review thousands of voluminous contracts for a particular client and the provider charges the lawyer for using the tool on a per-use basis, it would ordinarily be reasonable for the lawyer to bill the client as an expense for the actual out-of-pocket expense incurred for using that tool.

As acknowledged in ABA Formal Opinion 93-379, perhaps the most difficult issue is determining how to charge clients for providing in-house services that are not required to be included in general office overhead and for which the lawyer seeks reimbursement. The opinion concluded that lawyers may pass on reasonable charges for “photocopying, computer research, . . . and similar items” rather than absorbing these expenses as part of the lawyers’ overhead as many lawyers would do.⁷⁰ For example, a lawyer may agree with the client in advance on the specific rate for photocopying, such as \$0.15 per page. Absent an advance agreement, the lawyer “is obliged to charge the client no more than the direct cost associated with the service (i.e., the actual cost of making a copy on the photocopy machine) plus a reasonable allocation of overhead expenses directly associated with the provision of the service (e.g., the salary of the photocopy machine operator).”⁷¹

⁶⁶ ABA Formal Op. 93-379 at 7.

⁶⁷ *Id.* at 8.

⁶⁸ *Id.* at 7.

⁶⁹ *Id.*

⁷⁰ *Id.* at 8.

⁷¹ *Id.* Opinion 93-379 also explained, “It is not appropriate for the Committee, in addressing ethical standards, to opine on the various accounting issues as to how one calculates direct cost and what may or may not be included in allocated overhead. These are questions which properly should be reserved for our colleagues in the accounting profession. Rather, it is the responsibility of the Committee to explain the principles it draws from the mandate of Model Rule 1.5’s injunction that fees be reasonable. Any reasonable calculation of direct costs as well as any reasonable allocation of related overhead should pass ethical muster. On the other hand, in the absence of an agreement to the contrary, it is impermissible for a lawyer to create an additional source of profit for the law firm beyond that which is contained in the provision of professional services themselves. The lawyer’s stock in trade is the sale of legal services, not photocopy paper, tuna fish sandwiches, computer time or messenger services.” *Id.*

These same principles apply when a lawyer uses a proprietary, in-house GAI tool in rendering legal services to a client. A firm may have made a substantial investment in developing a GAI tool that is relatively unique and that enables the firm to perform certain work more quickly or effectively. The firm may agree in advance with the client about the specific rates to be charged for using a GAI tool, just as it would agree in advance on its legal fees. But not all in-house GAI tools are likely to be so special or costly to develop, and the firm may opt not to seek the client's agreement on expenses for using the technology. Absent an agreement, the firm may charge the client no more than the direct cost associated with the tool (if any) plus a reasonable allocation of expenses directly associated with providing the GAI tool, while providing appropriate disclosures to the client consistent with Formal Opinion 93-379. The lawyer must ensure that the amount charged is not duplicative of other charges to this or other clients.

Finally, on the issue of reasonable fees, in addition to the time lawyers spend using various GAI tools and services, lawyers also will expend time to gain knowledge about those tools and services. Rule 1.1 recognizes that “[c]ompetent representation requires the legal knowledge, skill, thoroughness and preparation reasonably necessary for the representation.” Comment [8] explains that “[t]o maintain the requisite knowledge and skill [to be competent], a lawyer should keep abreast of changes in the law and its practice, *including the benefits and risks associated with relevant technology*, engaging in continuing study and education and comply with all continuing legal education requirements to which the lawyer is subject.”⁷² Lawyers must remember that they may not charge clients for time necessitated by their own inexperience.⁷³ Therefore, a lawyer may not charge a client to learn about how to use a GAI tool or service that the lawyer will regularly use for clients because lawyers must maintain competence in the tools they use, including but not limited to GAI technology. However, if a client explicitly requests that a specific GAI tool be used in furtherance of the matter and the lawyer is not knowledgeable in using that tool, it may be appropriate for the lawyer to bill the client to gain the knowledge to use the tool effectively. Before billing the client, the lawyer and the client should agree upon any new billing practices or billing terms relating to the GAI tool and, preferably, memorialize the new agreement.

III. Conclusion

Lawyers using GAI tools have a duty of competence, including maintaining relevant technological competence, which requires an understanding of the evolving nature of GAI. In

⁷² MODEL RULES R. 1.1, cmt. [8] (emphasis added); *see also* ABA Comm. on Ethics & Prof'l Responsibility, Formal Op. 498 (2021).

⁷³ *Heavener v. Meyers*, 158 F. Supp. 2d 1278 (E.D. Okla. 2001) (five hundred hours for straightforward Fourth Amendment excessive-force claim and nineteen hours for research on Eleventh Amendment defense indicated excessive billing due to counsel's inexperience); *In re Poseidon Pools of Am., Inc.*, 180 B.R. 718 (Bankr. E.D.N.Y. 1995) (denying compensation for various document revisions; “we note that given the numerous times throughout the Final Application that Applicant requests fees for revising various documents, Applicant fails to negate the obvious possibility that such a plethora of revisions was necessitated by a level of competency less than that reflected by the Applicant's billing rates”); *Att'y Grievance Comm'n v. Manger*, 913 A.2d 1 (Md. 2006) (“While it may be appropriate to charge a client for case-specific research or familiarization with a unique issue involved in a case, general education or background research should not be charged to the client.”); *In re Hellerud*, 714 N.W.2d 38 (N.D. 2006) (reduction in hours, fee refund of \$5,651.24, and reprimand for lawyer unfamiliar with North Dakota probate work who charged too many hours at too high a rate for simple administration of cash estate; “it is counterintuitive to charge a higher hourly rate for knowing less about North Dakota law”).

using GAI tools, lawyers also have other relevant ethical duties, such as those relating to confidentiality, communication with a client, meritorious claims and contentions, candor toward the tribunal, supervisory responsibilities regarding others in the law office using the technology and those outside the law office providing GAI services, and charging reasonable fees. With the ever-evolving use of technology by lawyers and courts, lawyers must be vigilant in complying with the Rules of Professional Conduct to ensure that lawyers are adhering to their ethical responsibilities and that clients are protected.

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AI in Health Tech Transactions

Assessment Tool + Checklist

1. AI System Architecture and Technical Foundation

Core System Classification

- **Traditional AI Analysis:** Determine if system uses rule-based, logic-driven, or expert system approaches: good old-fashioned AI (aka GOFAI)
 - Assess transparency and predictability of rule-based components
 - Evaluate whether system behavior can be fully explained through programmed logic
- **Generative AI Components:** Identify any generative AI elements (LLMs, diffusion models, etc.)
 - Determine base models used (GPT, Claude, proprietary, etc.)
 - Assess fine-tuning and customization for healthcare applications
 - Document training data sources and relevance to healthcare use cases
 - Evaluate output variability and non-deterministic behavior
- **Hybrid System Architecture:** Map interaction between traditional and generative components
 - Document data flow between different AI system components
 - Assess how traditional AI validates or constrains generative outputs
 - Evaluate system complexity and potential failure points

Technical Infrastructure Assessment

- **Deployment Architecture:** Cloud, on-premises, hybrid, or edge computing implementation
- **System Dependencies:** Third-party APIs, external data sources, or model dependencies
- **Performance Metrics:** Response times, throughput capacity, and reliability benchmarks
- **Interoperability Standards:** HL7 FHIR, DICOM, or other healthcare data exchange protocols

2. Data Usage, Business Model, and Regulatory Implications

Data Utilization Framework

- **Training Data Usage:** How customer data will be used to improve AI models
 - Opt-in vs. automatic inclusion in training datasets
 - Data anonymization and de-identification procedures
 - Customer control over data usage for model improvements
 - Geographic and temporal restrictions on data usage

- **Inference and Processing:** Real-time data handling during system operation
 - Data residency requirements and geographic processing limitations
 - Temporary vs. persistent storage of customer data during processing
 - Data sharing with third-party model providers or processors

Regulatory and Compliance Impact

- **HIPAA Compliance Framework:**
 - Business Associate Agreement (BAA) terms and scope
 - Subcontractor arrangements and downstream BAAs
 - Minimum necessary standard application to AI processing
 - Patient access rights to AI-processed information
- **FDA Regulatory Status:**
 - Software as Medical Device (SaMD) classification if applicable
 - 510(k) clearance or de novo pathway status
 - Quality System Regulation (QSR) compliance requirements
 - Post-market surveillance and adverse event reporting obligations
- **State and Federal Digital Health Regulations:**
 - State AI disclosure requirements and patient notification laws (as applicable)
 - CMS coverage and reimbursement implications
 - State licensing requirements for AI-assisted healthcare services

3. Data Security and Protection Measures

Security Architecture

- **Encryption Standards:** End-to-end encryption for data in transit and at rest
- **Access Controls:** Role-based access control (RBAC) and multi-factor authentication
- **Network Security:** VPN requirements, network segmentation, and firewall configurations
- **Audit and Monitoring:** Comprehensive logging, real-time monitoring, and security incident response

Data Protection Mechanisms

- **Data Minimization:** Collection and processing limited to necessary healthcare functions
- **Data Retention Policies:** Clear retention periods and automated deletion procedures
- **Cross-Border Data Transfers:** International data transfer mechanisms and privacy shield frameworks
- **Breach Response:** Incident response procedures and breach notification timelines

4. Intellectual Property Rights and Ownership

Input Ownership and Rights

- **Customer Data Rights:** Retention of full ownership and control over input data
- **Derivative Works:** Rights to data transformed or enhanced by AI processing
- **Training Data Contributions:** Intellectual property implications of data used for model training

Output Ownership and Attribution

- **AI-Generated Content:** Clear ownership rights to AI system outputs and recommendations
- **Work Product Definition:** Distinction between AI outputs and human-AI collaborative work
- **Third-Party Content:** Rights and restrictions related to outputs that incorporate third-party information

Vendor Representations and Indemnifications

- **Output Accuracy Warranties:** Vendor representations regarding AI system performance and reliability
- **Intellectual Property Indemnification:** Protection against third-party IP claims related to AI outputs
- **Cloud Provider Issues:**
 - Downstream indemnification from cloud infrastructure providers
 - Data processing agreement alignment across the technology stack
 - Limitation of liability pass-through provisions

5. Reliability, Quality Assurance, and Healthcare Hardening

System Reliability and Hallucination Risk

- **Healthcare-Specific Hardening:** Evidence of customization and validation for healthcare use cases
 - Clinical validation studies and peer-reviewed research
 - Healthcare domain expert involvement in system development
 - Comparison to "wrapper on GPT-4" or generic AI implementations
- **Hallucination Mitigation:** Specific measures to prevent false or misleading outputs
 - Confidence scoring and uncertainty quantification
 - Source attribution and citation mechanisms
 - Human-in-the-loop validation requirements for critical decisions

Quality Assurance Framework

- **Testing and Validation Procedures:** Comprehensive testing protocols for healthcare scenarios
- **Continuous Monitoring:** Ongoing performance monitoring and drift detection
- **Error Detection and Correction:** Automated and manual error identification systems

- **User Feedback Integration:** Mechanisms for incorporating clinical user feedback into system improvements

Industry Certification and Standards

- **Coalition for Health AI (CHAI) Certification:** Assurance framework compliance
- **Healthcare AI Standards:** Adherence to emerging industry standards (IEEE, ISO)
- **Clinical Decision Support Standards:** CDS Hooks, SMART on FHIR implementation
- **Third-Party Audits:** Independent security and performance audits

6. Contract Term Management and Vendor Lock-in Prevention

Term and Termination Provisions

- **Contract Duration:** Appropriate term length given rapid AI technology evolution
- **Termination Rights:** Broad termination for convenience with reasonable notice periods
- **Auto-Renewal Restrictions:** Opt-in renewal requirements and annual review mechanisms
- **Technology Refresh:** Rights to upgrade or migrate to newer AI technologies

Data Portability and Vendor Independence

- **Data Export Rights:** Comprehensive data extraction in standard formats
- **API Access:** Continued API access during transition periods
- **Custom Integration Preservation:** Protection of custom workflows and integrations
- **Competitive Migration:** No restrictions on migrating to competing AI solutions

Change Management

- **Technology Evolution Clauses:** Rights to benefit from AI system improvements
- **Pricing Protection:** Caps on price increases and technology upgrade costs
- **Service Level Maintenance:** SLA consistency despite underlying technology changes

7. Standard Health Tech Commercial Provisions

Service Level Agreements

- **Availability Commitments:** Uptime guarantees appropriate for healthcare operations (99.9%+)
- **Performance Standards:** Response time commitments for AI processing and inference
- **Support Response Times:** Technical support SLAs for different severity levels
- **Disaster Recovery:** Recovery time and recovery point objectives for system outages

Risk Allocation and Liability Management

- **Limitation of Liability:** Appropriate caps considering healthcare risks and AI system criticality
- **Consequential Damages:** Mutual waiver with healthcare-specific carve-outs
- **Professional Liability:** Clear delineation between AI tool liability and clinical decision liability
- **Insurance Requirements:** Vendor insurance coverage including cyber liability and professional indemnity
- **Indemnification:** Indemnity for data breach as well as intellectual property infringement issues.

Financial and Commercial Terms

- **Pricing Structure:** Transparent pricing model (per-user, per-transaction, per-computation)
- **Implementation Costs:** Clear delineation of setup, training, and integration expenses
- **Scalability Pricing:** Cost implications of increased usage or expanded deployment
- **Payment Terms:** Milestone based payments tied to clear deliverables, acceptance and/or performance standards.