Artificial Intelligence Consortium for Applied Behavior Analysis

Artificial Intelligence and Behavior Analysis: Guidelines for Ethical Use

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Artificial Intelligence Consortium for Applied Behavior Analysis

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Artificial Intelligence Consortium for ABA (AIC-ABA) Description

The Artificial Intelligence Consortium for ABA (AIC-ABA) is a work group of *behavior analysts*, researchers, and subject matter experts in artificial intelligence (AI). The consortium was founded in March of 2024 to develop guidelines for the ethical and effective use of AI in Applied Behavior Analysis (ABA) service delivery. Our focus is on identifying best practices to ensure responsible AI implementation in the profession and related research.

The mission of AIC-ABA is to provide ethical guidance to behavior analysts in the use of AI in behavioral services. These ethical best practices safeguard the rights and welfare of individuals receiving ABA services, align with professional and legal requirements, and maintain the integrity of the profession. AIC-ABA aims to ensure that guidance is disseminated and available to practitioners in the profession.

Legal Disclaimer and Ethical Use Statement

AIC-ABA is not an accreditation body and holds no oversight responsibility or authority over organizations or behavior analysts. The guidelines provided in this document are intended to assist behavior analysts in using AI technologies ethically and responsibly. These guidelines are meant to provide a framework for behavior analysts who collaborate or work in the AI space. While these guidelines aim to promote best practices and mitigate potential risks, they are not a substitute for legal, regulatory, or professional guidance and shall not be construed as legal advice. Readers and users of this document should fully comply with all applicable federal, state, and local laws, as well as the rules and regulations governing their professional licensing, certification, and industry standards. The responsibility for ensuring legal and regulatory compliance lies with each behavior analyst.

Behavior analysts are ethically obligated and advised to uphold cybersecurity practices to protect client confidentiality, ensure data integrity, and maintain client and public trust. Therefore, it is the behavior analyst's responsibility to implement these practices and calls for adherence to established frameworks (e.g., Health Insurance Portability and Accountability Act (HIPAA) Security Rule, Family Educational Rights and Privacy Act (FERPA)) and all other regulations relevant to their work. Organizations should focus on thorough risk assessments, robust access controls, encryption, and zero trust architectures while also considering sector-specific recommendations like the Health Industry Cybersecurity Practices (Office of the National Coordinator for Health Information Technology, 2023). Behavior analysts in relevant leadership roles should ensure that National Institute of Standards and Technology (NIST) recommendations, General Data Protection Regulation (GDPR), and HITRUST Common Security Framework (CSF), and American Medical Association (AMA) policies are adhered to when within the scope and reach of their position.

Behavior analysts working in AI development and AI developers should collaborate when *AI systems* and tools are developed, deployed, and maintained. Before establishing any business relationships with those that influence product development, behavior analysts will outline clear expectations of what they seek from an AI system and tools regarding application. Transparent incident response protocols and proactive collaboration with business associates are essential.

Disclosure: Large language models (LLMs) were used as a tool to assist with summarization and suggestions. Members carefully reviewed and contributed to each section of this document, including those initially generated by LLMs.

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The Purpose of the Guidelines

The "Artificial Intelligence and Behavior Analysis: Guidelines for Ethical Use" provides recommendations to support behavior analysts, consultants, users, and developers of applications of AI across behavior analytic services from conceptualization through ongoing monitoring and evaluation. This document is intended for those providing behavior-analytic services across clinical, research, and other applied domains (e.g., education, criminal justice, social services). Providing specific protocols is beyond the scope of this document.

Each category below is operationally defined followed by high-level recommendations for that category. This list offers a starting point for ethical AI use, guiding reflection and decision-making, but is not intended as an exhaustive framework. Readers can familiarize themselves with content-specific terminology indicated in *italics* by referencing the Glossary of terms.

As AI technologies evolve, AIC-ABA may update its guidance based on growing research, community feedback, and emerging challenges. AIC-ABA will collaborate with members and professional organizations representing the field of ABA and will solicit input on recommendations.

Guidelines for Ethical Use of AI in Behavior Analysis

Human-Led

AI systems are defined as support for human decision-making, ensuring that judgment and critical thinking are maintained. Behavior analysts foster collaboration with human-led AI systems while maintaining human oversight and control of decisions and avoiding dependence on automated systems.

1. Behavior analysts are responsible and accountable for treatment activities and all *outputs* and impacts from using AI and other technologies, including products generated by supervisees or trainees.
2. Use AI system outputs as a starting point and not an end point. Outputs (e.g., treatment goals, progress summaries) should be reviewed and modified by the behavior analyst to meet the needs of the client. AI may be used to assist or inform decision making, leaving the behavior analyst responsible to ensure AI system outputs help to optimize client outcomes.

Transparency and Explainability

All *AI usage* (e.g., processes, decisions) should be explicitly disclosed to both behavior analysts and clients/collaborators, ensuring informed consent and trust.

1. Fully disclose and obtain informed consent for the use of *high stakes AI* in organizational systems and workflows.
    a. Include in the informed consent process the scope of clients and environmental contexts for whom the system is intended to benefit and those who were not equally represented.
    b. Informed consent should be obtained from clients for their data to be included in the evaluation of AI systems. Additionally, informed consent must include a clear process and the implications of revoking consent.
2. While it is generally recommended that all types of AI (high and *low stakes*) use be disclosed, when high stakes *closed AI systems* are used, the scope of client information, such as demographics, client assessment and intervention data used in the *training data* should be described to clients, collaborators, supervisees, trainees, and research participants.
    a. Disclosure of AI should include information about data ownership of the applications used.
3. When high stakes *open AI systems* are used, behavior analysts will refer clients to available disclosure statements from the open AI system, and risks should be discussed and informed consent obtained.

4. When AI is used, behavior analysts should provide clients with a means to provide transparent feedback and correction. Clients, caregivers, and collaborators should have a clearly defined and accessible process to question, challenge, or appeal decisions or recommendations made or influenced by AI systems. Behavior analysts are responsible for communicating:
    a. The extent to which AI influenced clinical decision-making.
    b. The process for submitting concerns or feedback.
    c. How those concerns will be reviewed, documented, and addressed.

5. Providers should make every reasonable effort to communicate disclosures in plain, accessible language and to offer them in the client's preferred language and format.

Privacy and Data Security

Client data should be rigorously protected to prevent unauthorized access or misuse, adhering to privacy laws across relevant jurisdictions and regulations from licensing and/or certifying entities. Privacy and data security practices should be explicitly identified in any third-party agreements, including protections in training models, storage, and/or disposition of protected information.

1. Establish safeguards to ensure that documentation is protected, how information is stored when using AI platforms, to ensure that applicable requirements are followed.
2. Behavior analysts should not input any protected health information and personally identifiable information to *open systems*.
3. Train supervisees on the risks of using open systems and council supervisees to not input any protected health information and personally identifiable information into open systems.
4. Ensure protections, controls, and ongoing evaluation to adhere to legal requirements in relevant jurisdiction in all instances where AI is being used.
5. Use *closed systems* whenever possible, especially for high stakes AI usage.

Accountability

Clear pre-defined lines of responsibility should be established for AI outputs, ensuring all parties follow identified procedures to ensure functioning of the AI system the way it was disclosed. Accountability in this regard relates to identifying roles of all members of the team (e.g., behavior analysts, developers).

1. Advocate for and gain review from an AI Ethics Review committee. This review committee could also be responsible for the approval of high stakes use cases.
2. Before AI systems and tools are adopted by an organization/behavior analyst:
    a. Roles and responsibilities for developers, users, and those who support the system should be outlined in the form of written policies and procedures before deployment through a collaborative process with interest-holder agreement.

b. There is a process developed for soliciting and documenting feedback from relevant collaborators resulting in the identification, reporting, and correction of specific fixes to the AI system when/if errors occur.
c. Behavior analysts maintain the onus of all clinical decisions made (see Human-Led #1).

Safety, Quality and Accuracy

AI systems are continuously monitored to meet applicable security and quality standards with processes to ensure outputs are accurate and safe to use and updates are deployed to address known and emerging risks and are communicated to collaborators.

1. Evaluate input and output from AI systems and tools to ensure accuracy in outputs.
2. Conduct ongoing and regular safety, quality and accuracy checks.
3. When potential safety, quality and accuracy concerns arise, behavior analysts have a procedure in place for discontinuing, pausing, or limiting the use of an AI system until such safety or accuracy concerns are resolved.
4. If safety, quality and accuracy concerns are not resolved, an assessment, such as a feasibility assessment, is conducted to determine appropriateness of restarting an AI system, where the behavior analyst evaluates the practicality, risk, and impact of restarting the AI system.

Equity and Minimizing Bias

It is critical that equity and minimizing bias are a part of design, development, and deployment of AI systems. Ensure AI benefits are distributed *fairly* across all demographic and socioeconomic groups, reducing disparities in access and outcomes. Behavior analysts must recognize, evaluate for, and actively resist the perpetuation of systemic racism, sexism, and ableism through AI systems. This includes critically evaluating data sources, questioning assumptions embedded in AI design, and advocating for justice-driven policies in service delivery and professional communities.

1. Ethical use of AI in behavior analysis must be rooted in meaningful engagement with the communities most affected by these systems. This includes involving interest-holders, particularly from historically marginalized groups, in the design, implementation, and evaluation of *AI tools* to help surface blind spots, reduce harm, and align systems with values of equity, dignity, and inclusion.
    a. Prioritize participatory design approaches and co-creation when developing tools that will directly affect client care or service access.
    b. Incorporate datasets that represent a diverse client population and/or data approaches in the building and development of AI systems and tools to assess and reduce bias.

    c. Consider steps to increase the likelihood of *equitable* access for both behavior analysts and clients in the deployment plan.
    d. Establish feedback loops that allow community members (i.e., clients, caregivers, and representatives from diverse racial, linguistic, socioeconomic, and ability backgrounds) to inform the ongoing development and improvement of AI systems.
    e. Collaborate with developers to conduct bias audits of inputs and outputs of AI, including those based on race, national origin, ethnicity, sex, gender identity, age, disability, or any other aspect of one's identity, and identify steps to mitigate potential risks.
    f. Collaborate with developers to create systems with considerations for accessibility (e.g., developing tools that meet *World Wide Web Consortium (WC3) Standards*).
2. Acknowledge and communicate limitations of AI systems and tools as it relates to equitable deployment. When using an AI system, behavior analysts request *model cards* and *data cards* from the developer to be able to communicate limitations and warn against unintentional exclusion based on lack of digital access or participation in training data.
    a. Review data cards where applicable to determine when underrepresented racial groups and/or people with disabilities are not equally represented in a training data set and encourage corrective action.
    b. Be familiar with how well an AI model performs across different demographic groups by reviewing model cards and/or system information and encourage developers to improve the fairness of models.

Evaluation and Continuous Improvement

Ongoing evaluation and updates are critical to refine AI systems (e.g., processes, outputs, usage), incorporating the latest findings to improve functionality and address emerging challenges.

1. An interdisciplinary team, including someone with *competence in AI*, should be involved in the evaluation of AI systems.
2. Establish continuous evaluation and feedback loops that actively include diverse collaborator perspectives to identify and mitigate bias, ensuring iterative improvements that equitably distribute AI benefits across varied populations.
3. Evaluations are informed by latest findings and current, relevant recommendations and evidence-based practices, resulting in the establishment of:
    a. protocols for validating AI recommendations to ensure accuracy and responses are both technologically sound and replicable,
    b. recommendations and actions for continued improvement, and
    c. evaluations are conducted on a regular basis (e.g., every six months).

4. Have a plan of action based on the outcomes of the evaluation, whether that involves discontinuing, pausing, or making modifications. The frequency of evaluations is adjusted (i.e., more frequent) when less than desirable outcomes are observed. High-stakes tools require more frequent evaluation monitoring and improvement cycles as opposed to low-stakes tools.
5. Require public reporting or at least internal documentation of the outcomes of regular bias audits.

Mitigating Dual Use and Misuse Risks

Behavior analysts must consider the potential for *dual use* of AI systems where tools designed for therapeutic, educational, or operational benefit may also be repurposed in coercive, punitive, or unethical ways. This includes uses such as surveillance, behavioral profiling, or predictive systems that could enable or allow for exclusionary practices (e.g., denying services based on inferred risk).

1. When part of the development team, behavior analysts proactively assess possible misuse scenarios during AI tool development and deployment.
2. Advocate for guardrails that prevent the repurposing of AI for surveillance, punitive, or exclusionary ends.
3. Promote the principle of beneficence first, ensuring AI serves client dignity, autonomy, and well-being.

AI within Client Outcomes

Evaluate AI's impact on service delivery and client outcomes. AI should be used to enhance client outcomes by supporting behavior analysts in delivering safe, effective, and meaningful services.

1. Regularly assess and document whether AI integration enhances or potentially hinders progress toward client goals. When socially meaningful outcomes are not obtained, modifications are made.
2. While AI will change the amount of data that can be incorporated into intervention recommendations, behavior analysts will understand how to appropriately use and evaluate (i.e., verifying data quality, assessing clinical progress, applying professional judgment, checking for bias) data presented in regards to client outcomes.
3. Measure how AI tools affect time allocation in sessions (e.g., more direct client interaction vs. administrative tasks) aiming for benefits to client experience and outcomes.
4. Evaluate whether AI supports administrative efficiency such as streamlined decision-making (e.g., data analysis, progress monitoring) and reduced administrative burden (e.g., scheduling, time billing, follow-ups/reminders).

5. When AI is used in interventions, behavior analysts establish baseline measurements before implementing AI tools to allow for meaningful comparison of client outcomes.

AI Literacy and Training

When using AI, seek out and receive education on AI's capabilities, limitations, and ethical use to enhance their digital and *AI literacy* and effectively integrate it into practice.

1. To achieve competence in AI, users should attend training sessions, workshops, and webinars, as well as seek mentorship (which likely will be someone outside of the field) from those who are experts in AI. Those using AI systems and tools should seek training, collaboration, and/or mentorship:
    a. In the use of AI in services
    b. In risks associated with the use of AI and potential biases
2. Establish procedural safeguards to ensure competence.
3. Stay current with emerging literature related to the AI systems and tools being used, including literature across multiple disciplines.

AI in Behavior Analytic Research

Behavior analysts' ethical obligation to employ evidence-based approaches necessitates more empirical evidence around the use of AI in behavior analytic services, particularly the use of high-stakes AI, and the presentation and dissemination of work incorporating AI tools or usage.

1. Researchers using AI should have competence in this area, including appropriate evaluation metrics when using AI models within their research.
2. Obtain informed consent, explaining how AI will be used and how data will be handled.
3. Researchers should have a policy in place if someone revokes their consent for their data to be included. For example, previous data may continue to be used, however, new data will not.
4. Researchers using AI models should adhere to Data Privacy and Security recommendations outlined above.
5. Due to intellectual property (IP) constraints, researchers may not always be able to share proprietary AI code or algorithms publicly. However, the lack of shared code does not exempt researchers from clearly outlining their methodologies, processes, and the underlying assumptions of the AI systems used, ensuring transparency and reproducibility to the extent possible.
6. AI usage, including content generation, topical research, and data analysis should be detailed in Institutional Review Board applications.

Conclusion

In conclusion, by adhering to Guidelines for Ethical Use of AI in Behavior Analysis, alongside existing laws and professional standards, behavior analysts can contribute to the ethical advancement and responsible implementation of AI within various applications of ABA.

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Glossary of terms

AI literacy:

The foundational understanding of how AI systems and tools work, including knowledge of how AI learns from data, makes predictions or recommendations, and the factors that can influence AI performance. AI literacy includes understanding common AI terminology, recognizing different types of AI applications, being aware of potential biases and limitations in AI systems, and knowing how to critically evaluate AI-generated information. This literacy serves as the knowledge base that enables behavior analysts to make informed decisions about when, how, and why to incorporate AI tools into their practice while maintaining professional standards and ethical obligations.

AI systems:

Computer systems designed to perform tasks that historically require human intelligence, such as recognizing patterns, learning from experience, making predictions, and solving problems. These systems perform tasks using algorithms and mathematical models, through large amounts of training data, through algorithms that learn patterns and relationships from unlabeled data without explicit guidance, and/or through trial and error by interacting with an environment and

receiving feedback (rewards or penalties) to optimize a policy for using AI outputs to support in human decision-making.

AI tools:

AI tools include computer, web-based, or mobile software applications and/or features that aid in performing tasks. These applications and/or features use AI systems to enable the tool to perform knowledge work augmentation tasks.

AI usage:

For the context of this document, the application and implementation of artificial intelligence systems in professional practice, research, or service delivery. For behavior analysts, this may include using AI systems and/or AI tools for data analysis, data collection, creating behavioral intervention plans, automating routine tasks, supporting decision-making processes, monitoring client progress, enhancing behavioral interventions, or using AI within financial systems for services provided.

Behavior analysts:

All behavior analytic practitioners and other healthcare providers whose scope of training includes behavior analysis. Terminology may vary across regions and countries; however, this document is intended to include all behavior analytic practitioners.

Closed systems:

Systems in which the AI algorithm operates solely within an organization's secure systems, minimizing exposure of data to external systems that a third party can access.

Competence in AI:

Competence in AI refers to obtaining and maintaining the knowledge, skills, and judgment necessary to responsibly and effectively use evolving AI systems within one's professional role. At the time of publication, the field of behavior analysis does not yet have established benchmarks or clear standards for AI competence. Competent practice requires ongoing learning, critical reflection, and an honest appraisal of both the capabilities and limitations of current AI tools, as well as one's own level of proficiency.

Data cards:

Clear summaries of important facts about data collections that help people understand the data's background, what it can and cannot do well, and any ethical issues to consider. Provide information about a dataset's origins, limitations, and potential ethical implications (Pushkarna et al., 2022).

Dual use:

Refers to where an AI tool can be used for legitimate, beneficial purposes and also potentially weaponized, misused, or exploited to cause harm.

Equitable:

The principle that AI systems should provide access to resources, opportunities, and outcomes by accounting for individual differences and systemic barriers that clients may face. Equitable AI goes beyond treating all clients identically to instead ensuring that AI system recommendations are appropriately tailored to meet diverse needs, circumstances, and backgrounds. This may involve adjusting for factors such as cultural differences, language barriers, socioeconomic constraints, or varying levels of technological access to ensure all clients can benefit equally from AI-enhanced services.

Fair:

The principle that AI systems and tools should produce equitable outcomes and avoid discriminatory bias across diverse groups of clients or populations. Algorithms, along with the use of training data, are developed to create fair AI systems that limit bias as much as possible with regards to a client's race, ethnicity, gender, socioeconomic status, disability, or other personal characteristics. Fair AI systems help ensure that all clients receive appropriate and equitable assessment, intervention recommendations, and treatment opportunities based on their individual needs rather than biased assumptions or skewed data patterns.

High stakes:

Use of AI systems and tools where the outcomes have significant, often irreversible implications on a living organism’s health, safety, or well-being, requiring rigorous validation and ethical oversight. These are contexts where AI usage directly affects people's rights, safety, livelihoods, or access to essential services (e.g., clinical decision-making or treatment recommendations, algorithms interpreting behavioral data, and predictive analytics used to guide interventions or policy decisions).

Low stakes:

Use of AI systems and tools where the outcomes are reversible, primarily assistive and/or not critical. Low stakes AI includes contexts where errors, biases, or malfunctions would have minimal impact or risk to client wellbeing, safety, or critical treatment decisions. This is often related to convenience, productivity, or low-risk tasks (e.g., simple grammar and spell-checking uses, autocomplete, and formatting suggestions).

Model cards:

Share details about how a machine learning model was created, including the development choices made, how it behaves differently across various population groups, and how effectively it performs for each of those groups (Mitchell, et al., 2019).

Open systems:

Systems in which the AI algorithm is exposed to external systems that could be read by, used to train, or accessed by a third party (outside of the terms of a defined business associate agreement (BAA)).

Output:

The result produced after processing input information through a series of computational steps or algorithms.

Training data:

Text, images, or information used to teach an AI system how to perform specific tasks or make predictions. These data consist of examples that the AI system analyzes to learn patterns, relationships, and rules.

World Wide Web Consortium (W3C) Standards:

A set of technical specifications, guidelines, and protocols developed by the World Wide Web Consortium to ensure the Web remains an open and accessible resource. These standards are set for the technology tools that develop web-based software and code in promoting fairness, responsiveness, and accessibility for people with disabilities.