



Department of Commerce
Office of Professional Licensure Review

2026 Periodic Review

Anesthesiologist Assistants

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Executive Summary

Background

Anesthesiologist assistants (AAs) provide pre-anesthesia care, anesthesia care, and post-anesthesia care to patients under the direction and supervision of a physician anesthesiologist. The AA profession was created in the 1960s, in response to a perceived shortage of anesthesia providers, to expand the number of patient cases an anesthesiologist can oversee at a time.

Utah began licensing AAs in 2023, and only five individuals hold the license at this time. Licensure requirements are uniform among states that license the profession and include: completing an accredited graduate program, passing a national examination, and obtaining certification with the National Commission for Certification of Anesthesiologist Assistants (NCCAA). Anesthesiologists can supervise only four AAs at a time, must remain immediately available to assist, and must personally participate in certain aspects of the anesthesia care.

Regulatory Model Recommendation: *Maintain licensure for anesthesiologist assistants*

- The anesthesia care that AAs help provide comes with a potential for serious complications, including cardiovascular issues, respiratory issues, and nerve damage. Patients are often heavily sedated or unconscious, leaving them in a vulnerable state.
- Harm from AAs is mitigated by the supervised nature of their work.
- OPLR considered, but decided not to recommend, removing the license and relying simply on the NCCAA credential. Licensure may enable growth of this profession in Utah, for example by preserving the same regulatory structure as other states, in addition to providing enforcement benefits for this higher-risk occupation.

Recommended Regulatory Adjustments: *None*

- There have been no substantiated complaints to the Division of Professional Licensing (DOPL) regarding an AA, and the supervision of AAs contributes to safe practice.
- The low uptake of the license is likely due to the lack of AA education programs in the state, a robust supply of physician anesthesiologists in Utah, and potentially lower pay in Utah compared to other states where AAs practice.
- The AA profession could develop in Utah if (1) employers adjust their care models to include greater use of AAs, (2) employers precept students from out-of-state schools, and (3) a public or private school creates an AA education program in the state.

Context

Consistent with its legislative mandate,¹ the Office of Professional Licensure Review (OPLR) reviewed Utah's licensing laws for anesthesiologist assistants. The review evaluated how well current regulations:

1. Protect the public from present and consequential physical and financial harm
2. Balance public and practitioner access to the occupation
3. Limit the economic impact of regulation on consumers, practitioners and the state²

OPLR's research for this review included analysis of Utah's current laws and rules, licensing data, academic literature, as well as laws and policies in other states. OPLR also conducted interviews with employers, educators, and state agencies. See [Appendix 1](#) for more information.

Background

Profession Overview

Anesthesiologist assistants (AAs) are anesthesia care providers who work under the direction and supervision of a physician anesthesiologist. AAs assist with pre-anesthesia care (performing exams, drawing blood, inserting lines), anesthesia care (administering anesthesia, monitoring patients, providing airway management, giving emergency care), and post-anesthesia care (following up with patients).³ AAs work under the Anesthesia Care Team model in which interventions are directed and supervised by an anesthesiologist and delegated to other anesthesia providers (e.g. AAs and certified registered nurse anesthetists, or CRNAs).⁴

Evolution of Profession

The AA profession was created in the 1960s in response to a perceived shortage of anesthesia providers. A group of physicians proposed the idea of a provider who could act as an extender for and under the direction of an anesthesiologist, expanding the number of patient cases an anesthesiologist can oversee at a time.⁵ The first AA program was created at Emory University in Atlanta Georgia in 1969.⁶ The National Commission for Certification of Anesthesiologist Assistants (NCCAA) was created in 1989 as a certifying body for AAs.⁷ AA education programs are now accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) through the Accreditation Review Committee for the Anesthesiologist Assistant

¹ Utah Code Ann. § 13-1b-203(2).

² Utah Code Ann. § 13-1b-302.

³ American Society of Anesthesiologists, "Statement on Certified Anesthesiologist Assistants (CAAs): Description and Practice."

⁴ American Society of Anesthesiologists, "Statement on the Anesthesia Care Team."

⁵ Emory University School of Medicine, Department of Anesthesiology, "History of the Profession."

⁶ Pinegar and Townsend, "The Role of Anesthesiology Assistants in the Anesthesiology Patient Care Team."

⁷ NCCAA, "History."

(ARC-AA).⁸ There are an estimated 4,300 AAs in the U.S.⁹

Profession in Utah

Utah began licensing AAs in 2023.¹⁰ There are currently only five licensed AAs in the state.¹¹

To become an AA in Utah, an individual must graduate from a CAAHEP-accredited program, pass the NCCAA certifying examination, obtain and maintain NCCAA certification, and pass a criminal background check.¹² CAAHEP requires programs to be at the graduate level. In addition, students in accredited programs must complete at least 2,000 hours of clinical training and 600 cases of anesthesia service.¹³

AAs in Utah must renew their license every two years by showing continued NCCAA certification.¹⁴ To maintain NCCAA certification, AAs are required to complete 50 hours of qualifying continuing education every two years and pass a recertifying exam periodically (year 4, year 10 and then every 10 years afterward).¹⁵

Utah law defines an AA's scope of practice broadly, giving them authority to perform "health care services delegated to the [AA] by the supervising anesthesiologist in accordance with the acceptable medical practice and the American Society of Anesthesiologists' [ASA] guidance for best practice of anesthesia in a care team model."¹⁶ For the full ASA list of AA activities¹⁷, see [Appendix 2.1](#). AAs must work under the supervision of an anesthesiologist, who must be in the facility and "immediately available" at all times, prescribe the care plan, participate "in the most demanding procedures... including induction and emergence," and monitor the care at "frequent intervals."¹⁸ An anesthesiologist can supervise a maximum of four AAs at a time.¹⁹

Approaches in Other Jurisdictions

Utah is one of 19 states that license AAs in the U.S., along with Washington DC. Three states (KS, MI, TX) allow anesthesiologists to delegate similar services to qualified individuals but do

⁸ ARC-AA, "For Students & Public."

⁹ NCCAA, "Number of CAA's."

¹⁰ The Utah Legislature considered licensing AAs for several years (see H.B. 477 in 2008, H.B. 269 in 2009, and H.B. 101 in 2010, for example) but did not pass a bill to license the profession until S.B. 121 in 2022.

¹¹ DOPL Licensee Data, accessed January 2026.

¹² Utah Code Ann. § 58-70b-302

¹³ CAAHEP, "Standards and Guidelines for the Accreditation of Educational Programs for the Anesthesiologist Assistant." The NCCAA has similar experience requirements for those taking the certification examination, though they require applicants to complete at least 650 anesthesia cases (NCCAA, "Clinical Experience Guidelines for Initial Certification as a Certified Anesthesiologist Assistant").

¹⁴ Utah Code Ann. § 58-70b-303(1)(a); Utah Admin. Code R156-70b-303b(1)

¹⁵ NCCAA, "Continuing Medical Education Handbook"; NCCAA, "Continued Demonstration of Qualifications Examination Handbook."

¹⁶ Utah Code Ann. § 58-70b-101(4)

¹⁷ American Society of Anesthesiologists, "Statement on Certified Anesthesiologist Assistants (CAAs): Description and Practice."

¹⁸ Utah Admin. Code R156-70b-103(3)

¹⁹ Utah Admin. Code R156-70b-103(2)

not issue an AA license.²⁰ Entry requirements for an AA license are highly standardized throughout the country, with all states and jurisdictions requiring graduation from an accredited program and completion of the NCCAA examination.²¹ In addition, the 1:4 supervision ratio is standard.²²

Unlike Utah, some states explicitly require advanced cardiovascular life support (ACLS) certification for licensure, some require AAs to submit protocol agreements with specific anesthesiologists who will be supervising them, and some limit the settings in which an AA can work.²³

Regulatory Model Assessment & Recommendations

Framework

In an effort to standardize how appropriate regulatory models are determined for each profession (e.g. license, registry, no regulation, etc.), OPLR developed a framework which incorporates its statutory review criteria.²⁴ Appropriate models are determined principally by an evaluation of the potential for harm and related factors that may aggravate or mitigate the potential for harm. These factors include the availability of consumer choice, vulnerability of patients, and independence of practice. See [Appendix 3.1](#) for potential regulatory models and the factors in OPLR's framework.

Potential for Harm

The work that AAs perform comes with a high risk of harm, including serious and permanent harm. Although rare, anesthesia can cause cardiovascular issues, respiratory issues, and nerve damage.²⁵ Additionally, while (increasingly) rare, anesthesia can be associated with death.²⁶ The potential for harm associated with AA practice is exacerbated by the vulnerability of the patients AAs work with, who may be completely unconscious and at risk of life-threatening issues, including airway disruptions. The U.S. Department of Labor's O*NET Consequence of Error Ranking, which estimates and ranks the severity of harm that could arise from different professions, places AAs at 72 out of 100. This is lower than CRNAs (94) and anesthesiologists (88) but is similar to a range of other healthcare professions (e.g., registered nurses at 74,

²⁰ American Academy of Anesthesiologist Assistants, "Certification."

²¹ OPLR Policy Scan.

²² OPLR Policy Scan.

²³ OPLR Policy Scan; NM, OK, and TN require ACLS certification; AL, CO, and FL require AAs to submit protocols or agreements with an anesthesiologist; and OH, VT, and WI define the types of settings an AA may work in (these are non-exhaustive lists). ACLS is one of the curriculum topics on the NCCAA certification examination, so even though Utah doesn't explicitly require ACLS certification, it is likely required by default through the NCCAA certification requirement (NCCAA, "Certification Examination Handbook").

²⁴ Among other criteria, OPLR is required to evaluate "whether the regulation of the occupation is necessary to address a present, recognizable, and significant harm to the health, safety, or financial welfare of the public" and consider "potentially less burdensome alternatives to the... existing regulation." Utah Code Ann. § 13-1b-302.

²⁵ See, for example, Thornfield, "Complications of General Anesthesia"; Radkowski et al., "A Review of Non-Cardiac Complications of General Anesthesia"; Brull et al., "Neurological Complications After Regional Anesthesia."

²⁶ See, for example, Li et al., "Epidemiology of Anesthesia-related Mortality in the United States, 1999–2005"; Gottschalk et al., "Is Anesthesia Dangerous?"

psychiatrists at 73, and urologists at 72).²⁷

Related Harm Factors

The potential harm associated with AAs is mitigated by clinical oversight. AAs work under the direction and supervision of an anesthesiologist at all times. The Centers for Medicare and Medicaid (CMS) will reimburse services provided by an AA only if the anesthesiologist is involved in seven specific aspects of the procedure. This includes participating in “the most demanding aspects of the anesthesia plan, including, if applicable, induction and emergence,” monitoring the care “at frequent intervals,” and being “physically present and available for immediate diagnosis and treatment.”²⁸ In this way, an AA’s potential for harm is lower than that of an anesthesiologist, who directs their work and is in charge of planning the anesthesia care. However, there are times during a procedure when an AA is the only anesthesia provider in the room and, while an anesthesiologist must be on site and readily available, complications with anesthesia can happen quickly.²⁹

Oversight is also provided by the NCCAA, the private organization that certifies AAs. The NCCAA administers a rigorous examination that can be taken only by graduates from an accredited program with extensive clinical training,³⁰ and it maintains robust requirements for certification renewal.³¹ All states that license AAs rely heavily on NCCAA certification for their license qualifications.³² In addition, the NCCAA has processes for suspending or revoking certification.³³ However, they are unlikely to have the same resources as the state for investigating and enforcing potential issues.

For more details on OPLR’s analysis of the AA profession according to the framework, see [Appendix 3.2](#).

Recommendation

OPLR recommends maintaining licensure of AAs due to the high-risk nature of the services they perform and the more recent emergence of the profession.

OPLR considered a recommendation to eliminate the AA license and instead rely on an exemption to the practice of medicine to allow those with NCCAA certification to offer anesthesia services under the direction and supervision of an anesthesiologist. This approach has merit because AAs cannot work independently and because there is a strong private

²⁷ O*NET, “Work Context - Consequence of Error.”

²⁸ 42 C.F.R. § 415.110

²⁹ OPLR Stakeholder Series

³⁰ NCCAA, “Certification Examination Handbook”; NCCAA, “Clinical Experience Guidelines for Initial Certification as a Certified Anesthesiologist Assistant.”

³¹ NCCAA requires AAs to complete 50 hours of continuing education credits every two years and pass a recertification exam periodically. See NCCAA, “Continuing Medical Education Handbook”; NCCAA, “Continued Demonstration of Qualifications Examination Handbook.”

³² OPLR Policy Scan

³³ See NCCAA, “Disciplinary/Appeals.”

certifying body that the state already relies on for its entry requirements for licensure. The benefit of this approach would be maintaining the same qualifications for practice while reducing some administrative costs to DOPL (which would no longer have to administer a license) and to practitioners (who would no longer have to register and renew a license with the state and pay the associated fees). However, given the low number of licensees and DOPL's comparatively reasonable licensing and renewal processes and fees, cost savings are likely minimal.

In addition, there are some benefits to licensure that may be lost with an exemption. Given that the AA profession is new in Utah, maintaining a similar regulatory structure to that of other states may, pragmatically, contribute more to growth of AAs in Utah than switching to an exemption. Second, Utah would lose the ability to remove someone from practice who poses a risk to the public, and would instead rely on employers' HR processes to thoroughly vet AAs before hiring. While employers have an incentive to hire only practitioners who are qualified and have a history of safe practice, the nature of the services that AAs perform is high risk and may warrant state oversight via licensure. Finally, with an exemption, Utah would lose its ability to monitor growth in the profession and whether AAs are generally practicing safely. Given the infancy of the AA license and profession in Utah, it may be beneficial for the state to wait for this data before considering a lower level of oversight.

Regulatory Model Adjustments & Recommendations

Framework

After determining an appropriate regulatory model, OPLR's framework also evaluates whether adjustments should be made within a recommended model to address any material and existing safety and access issues affecting the Utah public and practitioners. Regulatory model adjustments may include changing entry qualifications, the scope of practice, unprofessional or unlawful conduct, and/or supervision and independence provisions (see [Appendix 4.1](#)).

Safety Issues

OPLR did not find any evidence that AAs in Utah are practicing unsafely. There have been no complaints brought to DOPL regarding an AA since licenses first started being issued in 2023, though this is not surprising given how few licensees there have been.³⁴ Stakeholders OPLR interviewed confirmed there have not been any major safety issues, although newly graduated AAs (like many practitioners) experience a steep learning curve and require additional support.³⁵

While not specific to Utah, limited available research indicates that AAs do not have a higher morbidity rate than CRNAs, indicating generally safe practice.³⁶ AAs may not have the nursing education background required of a CRNA; however, AA programs typically require applicants to complete prerequisites and examinations similar to those that medical schools require, and

³⁴ DOPL Complaint Data; See [Appendix 4.2](#) for information on how OPLR uses DOPL complaint data.

³⁵ OPLR Stakeholder Series

³⁶ Sun et al., "Anesthesia Care Team Composition and Surgical Outcomes."

clinical requirements in AA programs are similar to those in a CRNA program.³⁷ Given these robust requirements and the supervised nature of the AA role, current licensing requirements support generally safe practice.

Access Issues

In settings that use the Anesthesia Care Team model (i.e., directed by a physician anesthesiologist), such as the University of Utah Health system, AAs and CRNAs are mostly used interchangeably.³⁸ However, CRNAs are distinct from AAs in that they can work independently of a physician anesthesiologist in some settings.³⁹ Thus AA licensees alone do not accurately portray access for anesthesia services in Utah.

The uptake of the AA license in Utah since 2023 has been minimal, with only five unique individuals holding the license at any one time since then. This slow uptake is likely due to several factors, including a lack of programs in Utah, potentially lower-than-anticipated employer demand, and lower AA salaries in Utah relative to other states.

There are 25 accredited AA programs in the U.S., but none in Utah. The closest are in Aurora, Colorado (University of Colorado Denver Anschutz Medical Campus), Centennial, Colorado (Nova Southeastern University - Denver), and Albuquerque, New Mexico (University of New Mexico).⁴⁰

Estimates suggest Utah has an adequate supply of physician anesthesiologists. Modeling from the U.S. Health Resources and Services Administration (HRSA), along with OPLR analysis of licensee survey data, indicates that Utah has more than enough anesthesiologists to meet current demand.⁴¹ This may have reduced immediate employer demand in Utah to hire AAs.

³⁷ For example, Emory University's program requires applicants to have completed courses in biology, biochemistry, physiology, and calculus, among others, and requires applicants to have passed either the MCAT or GRE (see Emory University School of Medicine, Department of Anesthesiology, "Prerequisites"). CAAHEP requires students to complete 2,000 hours of clinical experience and at least 600 anesthesia services (see CAAHEP, "Standards and Guidelines for the Accreditation of Educational Programs for the Anesthesiologist Assistant"). In comparison, the Council on Accreditation of Nurse Anesthesia Educational Programs requires CRNA students to receive 2,000 hours of clinical experience and at least 700 anesthesia cases (see COACRNA, "Standards for Accreditation of Nurse Anesthesia Programs").

³⁸ OPLR Stakeholder Series; see American Society of Anesthesiologists, "Statement on the Anesthesia Care Team." A stakeholder told OPLR that the only situation in which CRNAs are used and AAs are not is within University of Utah Health in the Moran Eye Center. Due to the high rate of procedures, it is difficult to meet the more robust supervision requirements for AAs in that setting.

³⁹ CMS allows governors to opt-out of physician anesthesiologist supervision requirements for CRNAs. In 2022, Utah Governor Spencer Cox instituted this opt-out for rural hospitals. See CMS, "Clarification of the Interpretive Guidelines for the Anesthesia Services Condition of Participation"; American Society of Anesthesiologists, "Opt-Outs."

⁴⁰ CAAHEP, "Find an Accredited Program." The Colorado campuses are both about 530 miles from Salt Lake City, and the New Mexico campus is about 600 miles from Salt Lake City.

⁴¹ U.S. Health Resources and Services Administration Workforce Projections estimate that Utah currently has more than enough anesthesiologists (112% adequacy). Of the states/territories that license AAs, Utah has the third highest estimated adequacy of anesthesiologists and is one of only six of these states with an estimated adequacy of 100% or above. OPLR's analysis of data from the Health Workforce Information Center (HWIC)/DOPL 2024 Physician Workforce Surveys shows an estimate of ~750 standardized FTE anesthesiologists in Utah in 2024, and the U.S. Bureau of Labor Statistics estimated the number of anesthesiologists in Utah to be 720 (see U.S. Bureau of Labor Statistics, "Occupational Employment and Wage Statistics: Utah, May 2024"). This could indicate that HRSA's

However, HRSA estimates that Utah is experiencing a shortage of CRNAs (32% adequacy), so the overall anesthesia provider workforce in the state may be less robust than HRSA's anesthesiologist supply estimates alone would suggest. In addition, lower potential adequacy of physician anesthesiologists in the future and cost pressures on health systems may increase demand for AAs in time.⁴²

There is some evidence that AAs in Utah are paid less than in some other states, but data is limited due to the low number of AAs practicing in the state.⁴³ This lower pay may be due, in part, to preferences for physician anesthesiologists in the Utah healthcare system.⁴⁴

Even with potentially lower relative salaries in Utah and graduate-level education and training requirements, the return on investment for AAs appears high. AA graduate programs in the U.S. range in length from 24 to 29 months and cost from ~\$105,000 to ~\$195,000 (with an average of ~\$137,000).⁴⁵ At the time of OPLR's review, one job listing for an AA at a large Utah employer advertised a total compensation package of \$264,000–\$289,000.⁴⁶

OPLR found no evidence that Utah's AA licensure policies are meaningfully different from other states or that they are contributing to Utah's low supply of AAs.⁴⁷ The education and examination requirements for AAs are rigorous but appear appropriate and likely aren't the main contributor to the state's low AA supply, given that other states have similar requirements and more AAs.

Recommendation

OPLR does not recommend making any changes to the AA license at this time. The entry requirements and supervision standards are in line with other states and appear reasonable given the high-risk nature of the work AAs perform.

Discussion

Despite low initial uptake, the introduction of the AA profession in Utah is a positive development. It gives individuals the choice to enter a rewarding profession with a meaningful return on investment, and it provides an alternative pathway to a career in anesthesia provision for candidates without a nursing background. In addition, while Utah is not currently experiencing a physician anesthesiologist shortage, HRSA modeling estimates that Utah's

estimated supply of anesthesiologists in Utah is low, meaning Utah could have an even greater surplus of anesthesiologists than HRSA suggests. OPLR's estimate includes general anesthesiologists (~620 FTEs), pain management anesthesiologists (~80 FTEs), and anesthesiologists with other subspecialties (~60 FTEs).

⁴² U.S. Health Resources and Services Administration Workforce Projections estimate that the supply of anesthesiologists will dip below estimated demand by 2033.

⁴³ An anonymous salary-sharing website, Marit, found an average AA salary in Utah of \$200,500, lower than in nearby Colorado (\$233,500), New Mexico (\$246,500), and the national average (\$246,781). South Carolina has the highest average salary at \$293,000. See Marit, "Anesthesiologist Assistant Salary in US."

⁴⁴ OPLR Stakeholder Series. OPLR heard anecdotal evidence of this preference.

⁴⁵ OPLR analysis of the tuition cost and program length of all 25 accredited AA programs.

⁴⁶ Job listing found by searching "utah anesthesiologist assistant job opening" on March 3, 2026.

⁴⁷ OPLR Policy Scan.

supply of anesthesiologists may fall below demand by 2033.⁴⁸ Having a developed AA profession by that time may help alleviate potential issues by providing healthcare facilities with a range of options for supplying anesthesia care.

While OPLR did not find anything that could be changed within licensure policy to encourage development of the AA profession, there are steps that employers and schools could take to facilitate growth:

- Employers may consider adjusting their care models to include AAs and offering them a competitive wage. Industry stakeholders suggest there are many AAs from Utah who are practicing outside the state and would be interested in moving back if they could find an AA position.⁴⁹
- Employers may consider precepting students from AA programs in other states. Utah employers and AA program leaders expressed their interest to OPLR in these arrangements.⁵⁰ If students conduct their clinical rotations in Utah, they may be more likely to stay and work in the state after graduation.
- The presence of an AA education program in Utah would likely increase the supply of AAs in the state. This could be achieved in two ways. First, a medical school in the state could open a program.⁵¹ Second, Utah could work with one of several prominent AA program centers (e.g., Case Western Reserve University, Nova Southeastern University) to open a satellite program in the state. The education program leaders OPLR spoke with described having a very robust applicant pool, so a Utah program would likely attract qualified students.⁵²

Rule Review

In accordance with Utah Code 13-1b-203(5), OPLR conducted an in-depth review of DOPL's AA rules, found in R156-70b.

The rule review covered potential rule changes needed to:

1. address specific rules that may be either overly burdensome (e.g., for individuals seeking to practice a profession or given the potential risk to public safety from a profession, etc) or insufficient (e.g., to ensure safe practice);
2. address rules misaligned with statutory language;
3. clarify language and correct references to statute or other rules; or
4. support OPLR's recommendations.

OPLR's review of R156-70b found:

1. One rule that is potentially insufficient to maintain patient safety. This is outlined in [Appendix 5.1](#);

⁴⁸ U.S. Health Resources and Services Administration, "Workforce Projections."

⁴⁹ OPLR Stakeholder Series.

⁵⁰ OPLR Stakeholder Series.

⁵¹ CAAHEP requires AA programs to be housed within a medical school. See CAAHEP, "Standards and Guidelines for the Accreditation of Educational Programs for the Anesthesiologist Assistant."

⁵² OPLR Stakeholder Series.

2. No rules misaligned with statutory language;
3. Four incorrect references and two instances of outdated language. These are outlined in [Appendix 5.2](#) and [Appendix 5.3](#), respectively; and
4. No rules that will need to be changed to reflect OPLR's recommendations.

Appendix

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1 Context

1.1 General Methodology

OPLR's methodology combines qualitative and quantitative methods with robust stakeholder engagement. Methods include:

- Analyzing data from workforce surveys administered by the Division of Professional Licensing (DOPL) as part of licensure renewal
- Conducting quantitative analysis of DOPL licensee and complaint data and publicly available data from other state and federal government entities (e.g., Utah Department of Health and Human Services, Utah Department of Workforce Services, Health Resources and Services Administration, National Practitioner Data Bank)
- Reviewing academic literature and reports on a profession's practice, efficacy, and safety
- Scanning education and credentialing requirements, programs, and content
- Reviewing state occupational regulation policies across the U.S.
- Engaging with a wide range of stakeholders, including Utah and other state governments and agencies, industry organizations, researchers, practitioners, education program leaders, and employers within a variety of settings

1.2 Literature and Policy Scans

To better understand the academic literature about and regulatory environment for AAs, OPLR used Gemini (Google's AI tool). OPLR analysts validated all results produced by Gemini. The validated sources were then used to evaluate research findings about AAs, map the national policy landscape, find patterns in regulation, make cross-state comparisons, and discover outliers. OPLR also used the data to help inform recommendations.

The following is the prompt OPLR used to gather studies on the safety of AA practice:

"Please summarize the current academic literature on the safety of anesthesia. What are the most common complications? What is the morbidity rate related to general anesthesia, and has this changed over time? What does the research say about the types of providers (anesthesiologists, CRNAs, anesthesiologist assistants) and their impact on safe anesthesia provision? . . . Besides the Sun et al. 2018 article, are there any other academic studies that compare clinical outcomes between AAs and CRNAs?"

OPLR verified all academic sources by scanning each source before using them.

OPLR also used Gemini to research how jurisdictions that license AAs differ regarding specific policies, such as the number of AAs an anesthesiologist can supervise at one time and the entry

requirements for AA licensure. The following is an example of a prompt used to research AA entry requirements:

“What are the requirements for licensure as an anesthesiologist assistant in [state]?”

OPLR analysts then verified Gemini’s results for each state.

This approach does contain limitations related to normal human error. It is possible that there is slight misreporting of some data due to limited accessible state information, errors in data entry, or mistakes made by Gemini that were not caught by OPLR’s manual verification.

2 Background

2.1 American Society of Anesthesiologists List of AA Tasks

Utah defines an AA’s scope of practice by pointing to guidance from the American Society of Anesthesiologists (ASA).⁵³ The ASA’s most explicit description of AA practice is found in its “Statement on Certified Anesthesiologist Assistants (CAAs): Description and Practice,” which explains that an AA may:

- “Obtain an appropriate and accurate preanesthetic health history, perform an appropriate physical examination, and record pertinent data in an organized and legible manner”
- “Obtain diagnostic laboratory and related studies as appropriate, such as drawing arterial and venous blood samples and any other necessary patient fluids”
- “Insert and interpret data from invasive monitoring modalities such as arterial lines, pulmonary artery catheterization, and central venous lines, as delegated by the supervising physician anesthesiologist”
- “Administer anesthetic agents and controlled substances under the delegation of a supervising physician anesthesiologist. This includes, but is not limited to, administration of induction agents, maintaining and altering anesthesia levels, administering adjunctive treatment, and providing continuity of anesthetic care into and during the post-operative recovery period”
- “Airway management to establish and maintain a safe and appropriate airway and provide appropriate ventilatory support”
- “Apply and interpret advanced monitoring techniques”
- “Perform post-operative patient rounds by recording patient progress notes, compiling, and recording case summaries and by transcribing standing and specific orders placed by the physician anesthesiologist”

⁵³ Utah Code Ann. § 58-70b-101(4)

- “Evaluate and treat life-threatening situations and administer care, such as cardiopulmonary resuscitation, on the basis of established protocols (BLS, ACLS, and PALS)”
- “Perform duties in intensive care units, pain clinics, and other settings, as appropriate, under the supervision and delegation of an anesthesiologist”
- “Train and supervise personnel in the calibration, troubleshooting, and use of patient monitors”
- “Perform administrative duties in an anesthesiology practice or anesthesiology department, including management of personnel”
- “Participate in the clinical instruction of others”
- “Perform and monitor regional anesthesia to include, but not limited to, spinal, epidural, peripheral, and IV regional, and other special techniques such as local infiltration and nerve blocks under the delegation of an anesthesiologist”

Importantly, the ASA clarifies that this is not an exhaustive list.⁵⁴

3 Regulatory Model Assessment & Recommendation

3.1 Menu of Regulatory Models and Factors Considered in Framework

Please see [this working document](#), OPLR’s Occupational Regulation Framework, for a more detailed explanation of OPLR’s approach to assessing occupational regulation and evaluating different regulatory models.⁵⁵

3.2 Model Assessment of AAs

The following tables summarize OPLR’s analysis of AAs according to factors that OPLR determined should influence the appropriate regulatory model for an occupation. Factors that OPLR considered as particularly determinative in its assessment of the profession are highlighted in bold.

Model Assessment of Anesthesiologist Assistants (AAs)
Harm Factors

⁵⁴ American Society of Anesthesiologists, “Statement on Certified Anesthesiologist Assistants (CAAs): Description and Practice.”

⁵⁵ OPLR, “OPLR Occupational Regulation Framework.” The document is also available on OPLR’s website in the “About OPLR” section, accessible here: <https://commerce.utah.gov/oplr/about/>.

Mechanism of Harm	Despite a low (and decreasing) rate of adverse outcomes, the administration of anesthesia does carry risks, including cardiovascular and respiratory issues as well as nerve damage. While rare, an anesthesia error can cause death.*
Severity, Permanence, and Likelihood of Harm	The potential harms associated with anesthesia have the potential to be both severe and permanent. Harm is likely to occur if these services are performed by an untrained individual due to the complex nature of the drugs used.
Consequence of Error	72 out of 100**
Downstream Impact	As above, services provided by AAs contain potential for severe and permanent harm, including death.
Consumer & Setting Factors	
Patient Vulnerability	AAs perform services on individuals who may be sick, injured, or undergoing a procedure. Patients are likely unconscious and at potential risk for airway obstruction.
Frequency of Physical Touch	AAs physically touch patients when they perform exams, administer anesthesia, and provide follow-up care.
Frequency of Private Setting	AAs may be alone with a patient briefly during a pre-operative evaluation or for short periods during a procedure. However, given their work in a care team, they are commonly surrounded by other providers.***
Information Asymmetry	The provision of anesthesia is complex and requires an understanding of a variety of different drugs and routes of administration. A typical patient would not understand the care provided by an AA, although a supervising anesthesiologist would.
Related Factors	
Independence	AAs cannot work independently. They work at all times under the direction and supervision of an anesthesiologist.
Patient Choice	Patients likely do not choose their AA, especially if they are receiving care in response to an emergency.
Information Availability	Patients have access to very little information about an AA beyond their credentials and their employer.
Level of Oversight	<i>Employer:</i> AAs must be directed and supervised by an anesthesiologist, meaning they cannot work independently of an employer. This employer must ensure AAs are properly supervised by the anesthesiologist in order for the services to be reimbursed through the Centers for Medicare and Medicaid Services (CMS).****

	<i>Government (outside DOPL):</i> The U.S. federal government requires certain supervision criteria be met in order for AA services to be reimbursed through CMS.***** At the state level, the settings in which an AA is likely to practice (e.g. hospitals and ambulatory surgical centers) are regulated through the Utah Department of Health and Human Services (DHHS). Facility licensing rules include regulations related to anesthesia care, including staffing and equipment requirements.^ <i>Private Bodies:</i> The National Commission for Certification of Anesthesiologist Assistants (NCCAA) is the certifying body for AAs.^ It set requirements for certification and recertification and administer initial and renewal examinations.^^ It does have a process through which an AA's certification can be suspended or revoked for certain actions, though it is unlikely that it has the same resources for investigation as the state does.^^^^
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* See, for example, Thornfield, "Complications of General Anesthesia"; Radkowski et al., "A Review of Non-Cardiac Complications of General Anesthesia: The Current State of Knowledge"; Brull et al., "Neurological Complications After Regional Anesthesia"; Li et al., "Epidemiology of Anesthesia-related Mortality in the United States, 1999–2005"; Gottschalk et al., "Is Anesthesia Dangerous?"

** O*Net, "Work Context - Consequence of Error"

*** OPLR Stakeholder Series.

**** 42 C.F.R. § 415.110.

***** 42 C.F.R. § 415.110.

^ See Utah Admin. Code R432-100-16; Utah Admin. Code R432-500-19.

^^ NCCAA, "NCCAA Overview."

^^^ See NCCAA "Certification Examination Handbook"; NCCAA, "Continued Demonstration of Qualifications Examination Handbook"; NCCAA, "Continuing Medical Education Handbook."

^^^^ See NCCAA, "Disciplinary/Appeals."

4 Regulatory Model Adjustments & Recommendations

4.1 Possible Adjustments

Please see [this working document](#), OPLR's Occupational Regulation Framework, for a more detailed explanation of how OPLR approaches whether adjustments should be made within a recommended regulatory model.⁵⁶

⁵⁶ OPLR, "OPLR Occupational Regulation Framework." The document is also available on OPLR's website in the "About OPLR" section, accessible here: <https://commerce.utah.gov/oplr/about/>.

4.2 DOPL Complaint Data

The Division of Professional Licensing (DOPL) receives complaints from individuals, other state agencies, co-workers, professional associations, and licensing boards. DOPL is required to “investigate unlicensed practice in regulated professions, acts or practices inconsistent with recognized standards of conduct, allegations of gross negligence or incompetence, and patterns of gross negligence or incompetence.”⁵⁷ Violations that meet the criteria for investigation are then prioritized and assigned to an investigator. DOPL may resolve investigations in a variety of ways, including closing an investigation due to a lack of evidence; referring the case to another agency or to law enforcement if appropriate; carrying out informal or formal administrative sanctions or stipulated agreements; issuing a citation; or denying, suspending, or revoking an individual’s license.

To analyze complaints sent to DOPL, OPLR used My License Office (MLO) and Salesforce to access closed complaints investigated by DOPL for all licenses/professions. MLO was used to analyze complaints between 2017 and 2022, while Salesforce was used for complaints between 2023 and 2024. This data contains information on the license name, the complaint type, and the disposition of the complaint, among many other data fields not relevant to OPLR’s analysis. DOPL personnel helped code the complaint dispositions as either substantiated, unsubstantiated, or no jurisdiction. Substantiated complaints are those where a disposition includes some type of disciplinary action, whether formal or informal (e.g., letter of concern, verbal warning, surrender of license). Unsubstantiated complaints have dispositions without a disciplinary action (e.g., dismissed, lack of evidence, unfounded). “No jurisdiction” complaints are complaints that may or may not have basis, but DOPL was not able to take action on the case.

OPLR filtered complaints to exclude any likely duplicates and then used substantiated complaints to calculate the number of complaints per license type or profession. OPLR estimated the complaint rate for each license type by dividing the number of substantiated complaints by the number of unique individuals who held that license type over the same period.

Limitations

There are significant limitations to this analysis, and the information collected should not be interpreted as a precise estimate of harm caused by AAs. DOPL data likely underestimates true harm, as many instances of harm may be handled in other ways (e.g., directly by employers), reported to other entities, or may never be reported. Additionally, some unsubstantiated complaints may have resulted in harm, but the necessary evidence was not produced.

There could also be latent factors correlated with both the likelihood of complaint and the profession, systematically biasing the comparisons across professions. This is especially true in healthcare, as certain professions, by their nature, include a greater potential for harm and may

⁵⁷ DOPL, [An Explanation of the Complaint Handling Process for the Division of Occupational and Professional Licensing](#).

generate more complaints. For example, anesthesiologists have a higher likelihood of causing severe harm to a patient than AAs because they can work independently of other providers and direct the work of the care team, not because anesthesiologists are “less safe” or less competent than AAs.

For these reasons, OPLR uses DOPL complaint data as directionally informative, but avoids direct comparisons across professions wherever possible. Fine comparisons across professions are unwarranted and unsupported by this data.

5 Rule Review

5.1 Potentially Insufficient Rules

Statute requires AAs to follow reimbursement requirements set by the Centers for Medicare and Medicaid Services, as long as these “do not conflict with state law.”⁵⁸ CMS requires anesthesiologists to be involved in seven specific aspects of a procedure.⁵⁹ DOPL rule lists four of these as a minimum requirement for AAs to follow but omits three, as seen in the following chart.

Required by CMS ⁶⁰	Required by DOPL ⁶¹
“Performs a pre-anesthetic examination and evaluation”	No
“Prescribes the anesthesia plan”	Yes
“Personally participates in the most demanding aspects of the anesthesia plan including, if applicable, induction and emergence”	Yes
“Ensures that any procedures in the anesthesia plan that he or she does not perform are performed by a qualified individual as defined in operating instructions”	No
“Monitors the course of anesthesia administration at frequent intervals”	Yes
“Remains physically present and available for immediate diagnosis and treatment of emergencies”	Yes
“Provides indicated post-anesthesia care”	No

To ensure safe practice and to avoid confusion for providers regarding federal and state requirements, DOPL should ensure all CMS requirements are included in state rules. This would

⁵⁸ Utah Code Ann. § 58-70b-101(5)(b).

⁵⁹ 42 C.F.R. § 415.110.

⁶⁰ 42 C.F.R. § 415.110.

⁶¹ Utah Admin. Code R156-70b-103(3).

mean explicitly requiring anesthesiologists to perform a “pre-anesthetic examination and evaluation” and to provide “post-anesthesia care.”

5.2 Incorrect References

Rule	Incorrect Reference	Correct Reference
R156-70b-101(3)	Section R156-1-107	This section no longer exists.
Intro of R156-70b-102	Title 58 Chapter 67 Medical Practice Act	Title 58 Chapter 67 Utah Medical Practice Act
Intro of R156-70b-102	Title 58, Chapter 70b, Anesthesiologist Assistant Practice Act	Title 58, Chapter 70b, Anesthesiologist Assistant Licensing Act
R156-70b-102(1)	Section 58-70b-402	Section 58-70b-402 does not use the term “acceptable medical practice”

5.3 Outdated Language

Rule	Current Language	Updated Language
R156-70b-102(2)	“...the American Society of Anesthesiologists Guidelines for the Ethical Practice of Anesthesiology, last amended December 13, 2020...”	“...the American Society of Anesthesiologists Principles for the Ethical Practice of Anesthesiology, last amended October 15, 2025...”
R156-70b-402(1)	“failing to comply with the ASA Ethical Guidelines”	“failing to comply with the ASA Ethical Principles”

OPLR was unable to find a current document titled “Guidelines for the Ethical Practice of Anesthesiology” produced by the American Society of Anesthesiologists (ASA). However, an official ASA document titled “Principles for the Ethical Practice of Anesthesiology” was amended in 2025.⁶² It’s likely that the ASA changed the name of this document, moving away from “guidelines” and to “principles.” For clarity, DOPL should change these references accordingly.

⁶² American Society of Anesthesiologists, “Principles for the Ethical Practice of Anesthesiology.”

6 Stakeholder Engagement

6.1 OPLR Interview Series

OPLR relied heavily on stakeholder engagement and qualitative interview data, combined with OPLR's other analysis, to conduct this review and develop recommendations. OPLR engaged with employers, educators, industry associations, practitioners, Utah legislators, and Utah and other state regulators. OPLR prioritized diversity of perspective and relevance to the industry in selecting stakeholders.

Interviews were conducted in person, over the phone, and via video conferencing using semi-structured interview methods. They were conducted one-on-one and with multiple members. Extensive notes were taken for all interviews.

OPLR conducted initial interviews to understand the role of AAs, determine the largest issues related to safety and access, and identify potential areas for change. OPLR engaged with stakeholders later in its review to test initial findings from analysis and preliminary recommendations. OPLR reflected on and synthesized feedback across multiple discussion sessions to develop clear and achievable evidence-based recommendations.

Limitations

This interview sample was not randomly selected and, therefore, is not completely representative. OPLR spoke to individuals most likely to represent the broad aims and concerns of their groups. Additionally, OPLR did not contact "consumers" of AAs (patients), so those perspectives were not incorporated. Thus, the stakeholder engagement and findings from these interviews should not be understood as fully representative of the views of all Utahns, employers, or any other person, group, or population.

Note that stakeholders' views are not always reflected in OPLR's recommendations. OPLR is directed by Utah Code 13-1b-302 to apply specific review criteria. These can and do lead to recommendations that diverge from stakeholder preferences. A stakeholder's appearance here is not an endorsement of OPLR's recommendations as such.

6.2 Stakeholder Engagement Summary

The following is a comprehensive list of individuals OPLR engaged with throughout the review of anesthesiologist assistants.

Stakeholder Engagement Summary	
Utah State Legislature	
Legislative Working Group	Rep. Melissa Ballard Rep. Jennifer Dailey-Provost Rep. Jim Dunnigan Rep. Katy Hall Rep. Cory Maloy Rep. Logan Monson Rep. Norman Thurston Rep. Raymond Ward Rep. Douglas Welton Rep. Ryan Wilcox Sen. Heidi Balderree Sen. Keith Grover Sen. Ann Millner Sen. Jen Plumb Sen. Evan Vickers Seth Anderson , Policy Analyst, LRGC Lisa Sorenson , Policy Analyst, LRGC Chris Williams , Associate General Counsel, LRGC
Other Government Stakeholders	
Utah Department of Commerce	Mark Steinagel , Deputy Commissioner, Department of Commerce and Director, Division of Professional Licensing Deborah Blackburn , Assistant Division Director, Division of Professional Licensing Larry Marx , Licensing Administrator, Division of Professional Licensing Allison Pulsipher , Board Administrator, Division of Professional Licensing
Industry Stakeholders	
Industry Associations	Jonathan Martin, MD , President, Utah Society of Anesthesiologists Jacob Spilker, CAA , President, Utah Academy of Anesthesiologist Assistants
Employers	Nathan Orgain, MD , Medical Director of Anesthesiology APC Practice, University of Utah Emily Zurcher, MD , Chief Medical Officer, Mountain West Anesthesia
Higher Education	Jason Kotun, CAA , Program Director, Master of Science in Anesthesia Program, Nova Southeastern University - Denver Katherine S. Monroe, CAA , Academic Program Director, Master

of Medical Science Program in Anesthesiology, Emory University
Gaurav Patel, MD, Clinical Program Director, Master of Medical
Science Program in Anesthesiology, Emory University
Serena Younes, CAA, Anesthesiologist Assistant Program
Director, University of Colorado

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