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Health Industry Insights

Smart & Safe Anesthesia: More Value & Lower Costs for Massachusetts Health Plan, Hospital and System Leaders

Evidence for strategies driving high quality, patient and surgeon satisfaction, with maximally efficient resource utilization

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Anesthesia services rank high among health plan and health system value drivers, enabling safe surgery and a healthy and dynamic health care delivery organization. In Massachusetts today, leadership options are also significantly shaped by costs. Approaches to anesthesia services can strengthen a health plan, health system, hospital or ambulatory surgery center. But inefficiency can make sustainability difficult.

- What evidence underpins anesthesia quality?
- What are the various ways anesthesia services are organized in Massachusetts?
- How may a facility achieve equilibrium of the highest quality care with utilization of nurse anesthesia services?
- Which well-accepted strategies maximize value and elevate quality anesthesia care?

Quality assurance in anesthesia is job one

Measurement of quality assurance and optimal patient outcomes has accumulated abundant evidence that anesthesia is more than 50 times safer today than it was in the 1980s.[i] Anesthesia services provided in Massachusetts by Certified Registered Nurse Anesthetists (CRNAs), physician anesthesiologists, or both together, enable many more procedures to be performed with greater safety, often in outpatient settings, speeding recovery and improving outcomes and health.

This safety record may be attributed to the advanced educational preparation of CRNAs and physician anesthesiologists and advancements in pharmacology and patient monitoring.

CRNAs are highly educated advanced practice registered nurses (APRNs), prepared at the masters' or doctoral level. With an average of 9,359 hours of clinical experience by graduation, CRNAs must pass a rigorous national certifying exam and meet stringent national recertification parameters that include a comprehensive examination every 8 years. They are legally responsible for the care they provide and recognized in all 50 states, DC and Puerto Rico. Their advanced education prepares them to deliver the full range of anesthesia services. In 2019 there are 54,000 CRNAs nationwide including 820 in Massachusetts.

The most current evidence shows that anesthesia services are of high quality when provided by any of the three anesthesia staffing models common in Massachusetts.

Select studies outlining the safety of CRNA services[ii]

Study	Key Finding
Cochrane Reviews, Lewis SR et al[iii]	No distinction in outcomes can be found between CRNA services, physician anesthesiologist services, or the services of both professionals together.
Nursing Economic$, Cintina and Hogan[iv]	CRNA services are extremely safe and represent far and away the most cost-effective anesthesia delivery model.
Health Affairs, Dulisse et al[v]	No harm found when CRNAs provide anesthesia services without supervision by physician anesthesiologists.
Medical Care, Negrusa and Hogan[vi]	Virtually no evidence that complication rates differ based on anesthesia provider scope of practice or anesthesia delivery model among CRNAs and anesthesiologists.

How may anesthesia services be delivered in Massachusetts?

Medicare spells out organization of anesthesia service in regulation and hospital conditions of participation interpretive guidelines. These requirements allow for delivery of anesthesia services in some or all departments of a hospital or ambulatory surgery center, and for their reimbursement. Under these rules, a hospital must:

- **Provide anesthesia in a well-organized manner** under the direction of a qualified doctor of medicine or osteopathy. Medicare does not require this person to be a physician anesthesiologist.
- **Have anesthesia services provided by a CRNA** to be supervised by the operating practitioner, or by an anesthesiologist who is immediately available if needed. The requirement for supervision, a hospital billing requirement not affecting quality of care, does not apply in states that have opted out of it. Massachusetts has not opted out.
- **Address CRNA services appropriately in policy.** According to Medicare, "When a hospital permits operating practitioners to supervise a CRNA administering anesthesia, the medical staff bylaws or rules and regulations must specify for each category of operating practitioner, the type and complexity of procedures that category of practitioner may supervise. However, individual operating practitioners do not need to be granted specific privileges to supervise a CRNA."

Massachusetts regulates CRNAs as a type of Advanced Practice Registered Nurse, subject to the Nurse Practice Act and the Board of Registration in Nursing. No physician supervision requirement for CRNAs to administer anesthesia appears in these acts or regulations, or in Medicare requirements. Massachusetts statutes and regulations require physician supervision of CRNA prescriptive authority and limit that authority to within 24 hours of the postoperative period.[vii]

What are cost-effective modalities of reimbursement for safe anesthesia services?

Overstaffing anesthesia services to satisfy changing surgery schedules may support surgeon and patient convenience. But it carries costs that must be borne or shifted from other priorities.

The same is true for costly care delivery models driven by outdated reimbursement modalities. Medicare pays the same fee whether anesthesia is delivered by physician anesthesiologists, CRNAs, or both working together. While many facilities choose to have anesthesia delivered by both CRNAs and physician anesthesiologists, and health plans cover those anesthesia and analgesia services, no Medicare or state requirement demands that they be provided or covered through costly and inefficient means.

In an era of value-driven health care, health plans and systems should consider how nonmedically directed anesthesia billing using the "QZ" modifier may improve the efficiency of care delivery and reduce health care costs. **Health plans that do not recognize the QZ modifier cause health systems and plans to pay additional, unnecessary costs for safe anesthesia services, and inadvertently limit patient access to care.**

In most systems, anesthesia services are billed using the following modifiers:

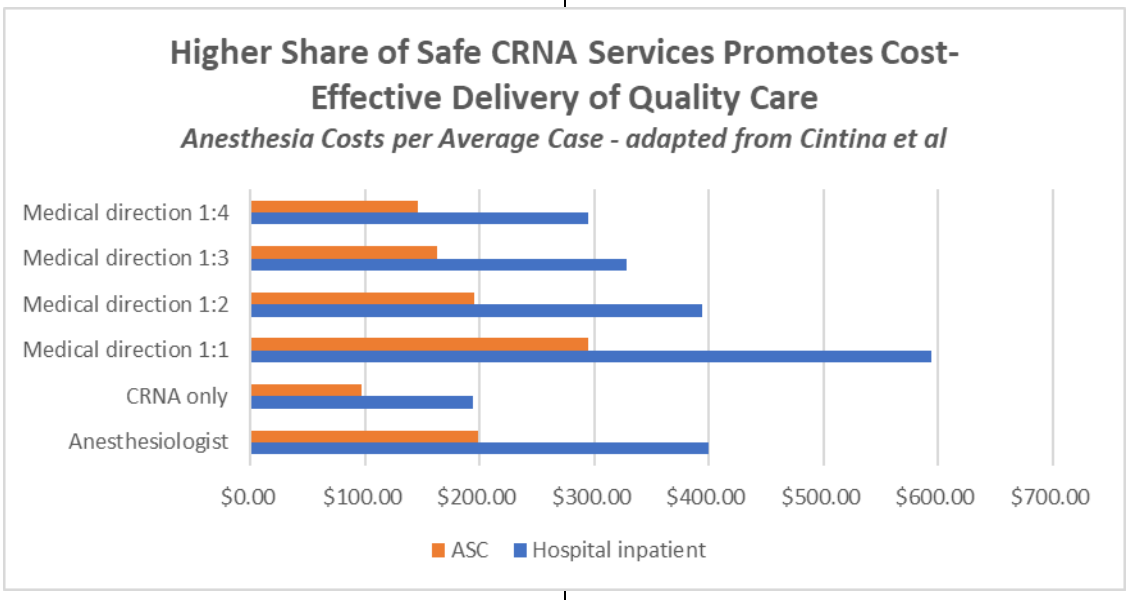
- **QX/QK, medically directed anesthesia services.** In this billing modality, a medically directing physician anesthesiologist must perform 7 specific anesthesia tasks in each of up to four concurrent cases. The physician anesthesiologist bills 50% of a fee for each of up to 4 concurrent cases. The

CRNA providing the anesthetic in each case bills the other 50% of the fee. Total, 100% of a fee is provided in each case. A physician anesthesiologist may not bill for concurrently medically directing and personally performing anesthesia services. If the physician anesthesiologist does not perform all seven tasks required under QX anesthesia billing rules, the service must be billed AD or QZ, described below. Medical direction is a billing modality; the Medicare agency has made clear it is not a quality of care standard.[viii] Billing for medical direction without having provided it poses fraud risk.

- **AD, medical supervision.** This Medicare payment modality may be applied in cases where the physician anesthesiologist is supervising more than 4 concurrent CRNA anesthesia services. This modality also reduces the overall anesthesia fee under Medicare Part B. This modality is not recognized by MassHealth (Medicaid/CHIP).
- **AA, personally performed physician anesthesiologist services.** In this modality, the anesthesia service is provided by the physician anesthesiologist. 100% of a fee is provided.
- **QZ, nonmedically directed services.** Here, the anesthesia service may be provided by a CRNA, or by a CRNA and a physician anesthesiologist in a model of care where a safe anesthetic is delivered but the inefficient requirements of medically directed anesthesia services billing are not required to be met. This model, recognized by Medicare and MassHealth,[ix] provides health plans and health care facilities an efficient method to ensure flexibility in delivery of safe anesthesia care that is more cost-effective. The QZ modifier allows anesthesia staffing that best meets patient acuity consistent with patient safety. Commercial plans and health systems not using QZ may drive higher health care costs without improving quality outcomes. 100% of a fee is provided under Part B.
- **Medicare anesthesia payment teaching rules** govern payment in clinical educational settings. A facility applies teaching rules to compliantly bill anesthesia services involving anesthesiology residents or student nurse anesthetists.[x] Such a facility may apply conventional billing modalities to the rest of its anesthesia cases.

Evidence shows anesthesia delivery models making greater use of CRNAs provide clear value advantages and ensure safety. A recent study comparing cost efficiency of anesthesia delivery models, as well as their impacts on billing and revenue collection, found that models using some or all CRNAs were more cost-effective and yielded greater collectible billings.[xi]

Cintina and colleagues' Medicare simulation method evaluated common anesthesia delivery models in hospitals (average demand in 12 stations), ASCs (7 stations) and outpatient surgery. The medical direction models refer to anesthesia care delivery in which an performs 7 specific services for each case concurrently provided by a CRNA. Select findings are summarized in the table below:[xii]



Which strategy maximizes value from anesthesia services? Although fee-for-service anesthesia represents a modest fraction of overall billings and is billed according to a unique anesthesia payment system, use of billing modalities that support safe, efficient care delivery maximizes the value of anesthesia services within a system, facility or health plan.

Health care facilities commonly contract for some or all of their anesthesia services with an anesthesia or multispecialty group. Such groups commonly provide and bill for anesthesia services. Most groups participate in public benefit programs and negotiate market rates with health plans or facilities.

Some anesthesia groups may request the facility pay a subsidy for those services not covered by insurance, such as on-call services necessary to support procedural efficiency. If the group provides and bills for anesthesia services according to a high-cost delivery model such as physician anesthesiologists medically directing 1 – 3 concurrent CRNA cases, the group's anesthesia services subsidy demand may be quite high.

According to a 2018 survey of anesthesia group costs and revenues, hospitals paid an average $2.23 million annual subsidy to anesthesiology groups, with the 90th percentile reporting a subsidy of $4.42 million.[xiii] Such subsidies are sensitive to the market; health care facilities should emphasize safe, high quality anesthesia care delivery using efficient delivery models that lower costs.

Facilities may achieve significant benefits billing anesthesia QZ nonmedically directed. While Medicare and commercial plans allow providers to bill anesthesia services by various modifiers indicating the qualified provider type, one modifier – QZ nonmedically directed – clearly maximizes a facility's flexibility to organize anesthesia services in a safe and efficient manner.[xiv]

Modifiers representing physician anesthesiologist personally performed (AA) or physician anesthesiologist medical directed services (QZ / QK) require facilities to institute higher-cost anesthesia delivery models with no advantage in quality.[xv] The QZ modifier by contrast allows a facility to deliver anesthesia services by CRNA, physician anesthesiologist, or both working together. Medicare pays QZ anesthesia services the same fee as other modifiers.

Innovative models for care delivery are supported by a new Massachusetts Health Policy Commission state report. In its *Health Care Cost Trends Report,* MHPC says, "The Commonwealth should support advancements in the health care workforce that promote top-of-license practice and new care team models. Policymakers should review and amend scope of practice laws that are restrictive and not evidence-based, including for Advanced Practice Registered Nurses."[xvi]

An incentive for quality rural anesthesia services. As an incentive to ensure access to quality care in rural America, Medicare has a Part A program that pays the reasonable-cost pass-through of anesthesia services provided by a CRNA employee or contractor. In a qualifying rural hospital, Medicare permits pass-through payment for all Medicare services a CRNA is authorized by the state of Massachusetts to provide. To learn more about the pass-through program, see the pertinent Medicare regulations at 42 CFR §412.113(c). The pass-through program is not available for physician anesthesiologist services.

What about liability?

Liability is consistently one of the most common concerns surgeons and hospital executives express about CRNA services. CRNA care does not increase liability for surgeons or facilities compared with physician anesthesiologists providing the same services.

- **Captain of the ship,** the idea that a physician is responsible for everything that happens in the operating room, has never been used to win a liability case in the state of Massachusetts.
- **Vicarious liability** suggests a surgeon is responsible for another's acts. In fact, every health care professional is responsible for his or her own acts. The only time a surgeon is liable for another's act is when the surgeon specifically and precisely orders an action from a subordinate employee rather than to permit another professional to use expert judgement.
- **Negligent supervision** suggests a surgeon may be liable for something he or she should have done. This idea has never been used to win a liability case involving a CRNA in the state of Massachusetts.

Are "anesthesiologist assistants" an answer for Massachusetts health care facilities? Some physician anesthesiologists promote another provider type, "anesthesiologist assistants." AAs are not an answer for Massachusetts facilities or health plans:

- AAs are not licensed, recognized or available in Massachusetts. Fewer than 2,000 exist in the U.S.
- Unless they are medically directed by a physician anesthesiologist who is physically present for seven specific services in each case involving AAs – a high-cost anesthesia delivery model – AA services are not covered by Medicare Part B.

Services provided by CRNAs and physician anesthesiologists in Massachusetts within scope	CRNAs	Physician anesthesiologists
Perform and document preanesthetic assessment and evaluation of the patient	**Yes**	Yes
Develop and implement anesthetic plan	**Yes**	Yes
Initiate anesthetic techniques which may include general, regional, local and sedation	**Yes**	Yes
Select and administer anesthetic drugs	**Yes**	Yes
Facilitate emergence and recovery from anesthesia	**Yes**	Yes
Respond to emergency situations by providing airway management, administration of emergency fluids and drugs, and using basic or advanced cardiac life support techniques	**Yes**	Yes
For more information about practice and privileges	www.aana.com/clinicalprivileges.aspx	

For further information contact:
Massachusetts Association of Nurse Anesthetists
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[ii] An in-depth selection of research in anesthesia safety may be found at the website http://www.future-of-anesthesia-care-today.com/research.php, an initiative of the American Association of Nurse Anesthetists, Park Ridge, IL. Retrieved 9/18/2019.
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[vii] 244 CMR 4.00, MGL 112 Sec. 80B, MGL 112 Sec. 80H.
[viii] 63 FR 58843.
[ix] 101 CMR 316, and 130 CMR 433.454.
[x] Centers for Medicare & Medicaid Services. Medicare claims processing manual Chapter 12, physicians and nonphysician providers. Rev. 4339, 7/25/2019. Medicare Part B anesthesia payment teaching rules may be found at Sec. 100.1.2.3 (surgical procedures, anesthesia) and Sec. 140.5 (payment for anesthesia services by a teaching CRNA) https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Downloads/clm104c12.pdf, retrieved Oct. 11, 2019.
[xi] Cintina and Hogan.
[xii] Cintina and Hogan, adapted from tables 4 and 6.
[xiii] Medical Group Management Association DataDive. Charges & revenue practice data for anesthesiology. 2019 survey from 2018 data.
[xiv] Centers for Medicare & Medicaid Services. Medicare claims processing manual Chapter 12, physicians / nonphysician providers. Rev. 4068, 5/31/18. https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Downloads/clm104c12.pdf, retrieved 10/26/2018. Anesthesia modifiers are described in Secs. 50 and 140.
[xv] Cintina op cit.
[xvi] Altman S, chair. 2018 Health Care Cost Trends Report. Massachusetts Health Policy Commission, Boston, MA. February 2019. p. 9. https://www.mass.gov/files/documents/2019/02/20/2018%20Cost%20Trends%20Report.pdf, retrieved 12/30/2019.