

Introducing “**Efficiency-driven Anesthesia Modeling**”

Tracy P. Young MSNA, MBA, CRNA

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Disclosure Statement

Tracy Paul Young MSNA, MBA, CRNA

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In order to obtain contact hours, you must attend/complete at least 85% of this session to receive the educational CE credits for this activity.

I have no financial relationships with any commercial interest related to the content of this activity- beyond being a practicing CRNA who benefits from a stronger workforce.

I am founder and CEO of YPS Anesthesia, *an anesthesia management company*, which provides outsource anesthesia services to facilities using some of these concepts.

I will **not** discuss off-label use during my presentation.

Additional Disclosures

- This is a “Family” Discussion
- Some of this topic is based on facts, and some on opinions
- Why I am presenting this information



Learner Outcomes



Understand a discussion of Efficiency-Based Anesthesia Modeling as it relates to the participants place of employment and community.



Identify CRNA value with stakeholders using data and a national recognized policy framework.

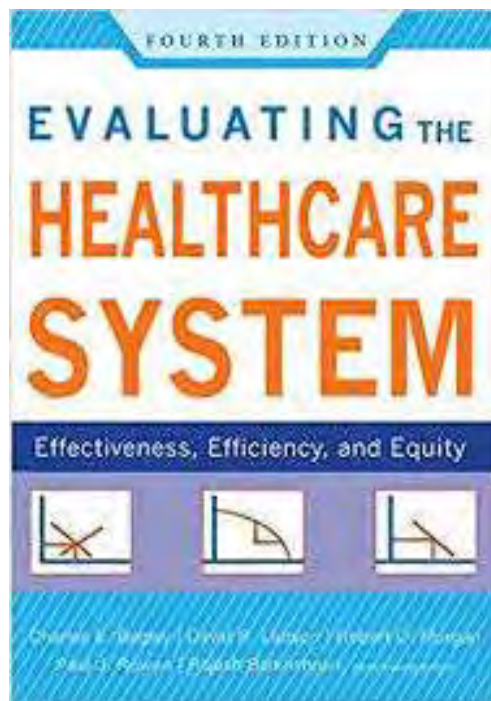


Understand the value of CRNA practice in reducing costs, increasing access, and advancing quality for patients and health systems.

3-E Model of Healthcare Evaluation



3-E Model of Policy Analysis



The point of
sound
policy/decision
making

Healthcare Policy Research

- Economics
- Political Science
- Management Science
- Psychology
- Sociology
- Epidemiology
- Public Health



Effectiveness

Intended or Desired Outcomes

- Overall Wellbeing
- Physical and Mental Function
- Disease Treatment
- Quality of Life
- Economic Productivity
- Life Expectancy

Does it Work as Intended for the population?



Efficiency

Outcome

- “Production Efficiency”
- What inputs (staffing model) create lowest cost?

Maximum Production

Input

- “Allocative Efficiency”
- Combination of services to produce outcome

Optimal Distribution



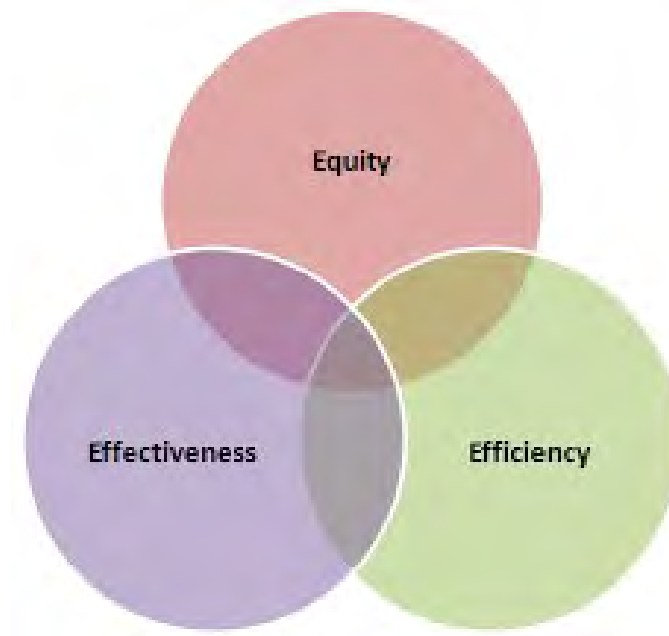
Equity

Distribution of Health Services

- Disparities
- Rural
- Equality
- Access



3-E Model Applied to Anesthesia Providers



Effectiveness

CRNA

No Harm Found...

Dulisse B, Cromwell J. No harm found when nurse anesthetists work without supervision by physicians. *Health Aff (Millwood)*. 2010 Aug;29(8):1469-75.

No definitive statement can be made about the possible superiority of one type of anaesthesia care over another

Lewis SR, Nicholson A, Smith AF, Alderson P. Physician anaesthetists versus non-physician providers of anaesthesia for surgical patients. [Cochrane Database of Systematic Reviews](#) 2014, Issue 7

MDA

Physician Anesthesiologist Care Decreases Risk of Death and Complications

Silber JH, Kennedy SK, Even-Shoshan O, et al. Anesthesiologist direction and patient outcomes. *Anesthesiology*. 2000;93(1):152-163.

Hospitalization After Surgery Far Less Likely if Physician Anesthesiologist Provides Care

Memtsoudis SG, Ma Y, Swamidoss CP, Edwards AM, Mazumdar M, Liguori GA. Factors influencing unexpected disposition after orthopedic ambulatory surgery. *J Clin Anesth*. 2012;24(2):89-95

AA

Surgical Outcomes Equivalent Whether Physician Anesthesiologist Assisted by Nurse Anesthetist or Anesthesiologist Assistant

Sun EC, Miller TR, Moshfegh J, Baker LC. Anesthesia care team composition and surgical outcomes. *Anesthesiology*. 2018;129(4):700-709

Another Faulty Study. Facts Matter.



RETURN TO SENDER

Almost 67% of the cases classified as not including a physician anesthesiologist by Silber either 1) had no record of a bill for anesthesia services or 2) had a physician anesthesiologist involvement in some portion of the surgical procedure. Also troublesome, cases that were classified as a physician anesthesiologist working "alone" were not differentiated from cases in which anesthesia was delivered via an anesthesia care team model.

Source: Anesthesiology

152

Anesthesiology
Vol. 105, No. 1, January 2007
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Lippincott Williams & Wilkins, Inc.

Anesthesiologist Direction and Patient Outcomes

John D. Silber, M.D., Ph.D.,^{1,2,3,4} Sean C. Aspinale, M.D.,¹ Gail Evan Shapiro, M.D.,⁵ J. Hui Chen, M.D.,⁶ Joseph P. Franks, M.D.,¹ Ann M. Silvers, M.D.,⁷ David S. Longmire, M.D.¹

Background: Anesthesiologists direct the majority of surgical procedures, but it is not clear if this is associated with better patient outcomes.

Objective: Assess the association between anesthesiologist direction and patient outcomes, including mortality, morbidity, and length of stay.

Design: Retrospective cohort study.

Setting: A tertiary care hospital.

Subjects: 1,000 patients undergoing elective surgery.

Measurements and Main Results: Patients directed by anesthesiologists had lower mortality rates (1.5% vs. 2.5%, $p = 0.001$), lower morbidity rates (15% vs. 18%, $p = 0.001$), and shorter lengths of stay (4.5 days vs. 5.5 days, $p = 0.001$) compared to those not directed by anesthesiologists.

Conclusion: Anesthesiologist direction is associated with better patient outcomes.

Keywords: Anesthesiology, patient outcomes, mortality, morbidity, length of stay.

Abbreviations: ASA, American Society of Anesthesiologists; LOS, length of stay; OR, operating room.

Introduction: Anesthesiologists are the primary providers of anesthesia services in the United States.

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patients whose anesthesia care was provided by an anesthesiologist with the outcomes of patients whose anesthesia care was not provided by an anesthesiologist.

Methods: Cases were defined as being either "directed" or "not directed" by an anesthesiologist, depending on the type of involvement of the anesthesiologist. Anesthesiologist involvement was defined as being involved in the preoperative, intraoperative, or postoperative care of the patient. Cases were classified as being directed by an anesthesiologist if the anesthesiologist was involved in the preoperative, intraoperative, or postoperative care of the patient. Cases were classified as not being directed by an anesthesiologist if the anesthesiologist was not involved in the preoperative, intraoperative, or postoperative care of the patient.

Results: Anesthesiologist direction was associated with better patient outcomes. Patients directed by anesthesiologists had lower mortality rates (1.5% vs. 2.5%, $p = 0.001$), lower morbidity rates (15% vs. 18%, $p = 0.001$), and shorter lengths of stay (4.5 days vs. 5.5 days, $p = 0.001$) compared to those not directed by anesthesiologists.

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Efficiency

CRNA

“In summary, potential cost saving strategies...would be to increase the number of procedures performed by CRNAs alone or to increase the proportion of procedures under the supervisory model.”

Hogan PF, Seifert RF, Moore CS, Simonson BE. Cost effectiveness analysis of anesthesia providers. *Nurs Econ*. 2010 (updated 2016) May-Jun;28(3):159-69.

MDA

Physician-Led Anesthesia Care Saves Lives, Reduces Costs

Abenstein JP, Long KH, McGlinch BP, Dietz NM. Is physician anesthesia cost-effective?. *Anesth Analg*. 2004;98(3)

*Primary basis is no cost difference to insurers or Medicare for provider class- ignores hospital subsidies

* ASA claims that “opt-out” has not improved patient access or reduced travel distance. Correct: as opt-out did not change where people live or their primary care providers

* Fail to demonstrate any tangible cost-saving from evaluated literature

AA

Takes too long to hire a CRNA and not enough anesthesia providers so another group will increase resources

Mesrobian JR, Howard O. The case for hiring anesthesiologist assistants. *American Society of Anesthesiologists*. 2012; 76(1).

***All evaluated evidence fails to present a model that shows savings in staffing models over CRNA- all references are to similar salaries and equal work performed (under medical direction) so equal costs to a CRNA Medical Direction Model**

Equity

CRNA

CRNAs correlated with lower-income populations where anesthesiologists correlated with higher-income populations. Furthermore, CRNAs correlated more with vulnerable populations such as the Medicaid-eligible population, uninsured population, and the unemployed.

Liao CJ, Quraishi JA, & Jordan LM. (2015). Geographical Imbalance of Anesthesia Providers and Its Impact on Uninsured and Vulnerable Populations. *Nurs Econ.* 33(5):263-270.

MDA

VA Report Finds Insufficient Evidence to Support Full Practice Authority Related to Nurse Anesthetists

McCleery E, Christensen V, Peterson K, Humphrey L, Helfand M. Evidence Brief: The quality of care provided by advanced practice nurses. In: *VA Evidence Synthesis Program Evidence Briefs*. Washington (DC): Department of Veterans Affairs (US); September 2014.

AA

Suitt MA, Simpson DE, Tillet J. Licensing anesthesiologist assistants will help not harm access to anesthesia care in rural areas. North Carolina Society of Anesthesiologists. <http://www.ncsoa.com/pdf/Rural%20Access.pdf>.

* Fail to demonstrate how AAs will help with rural areas without physician anesthesiologists present

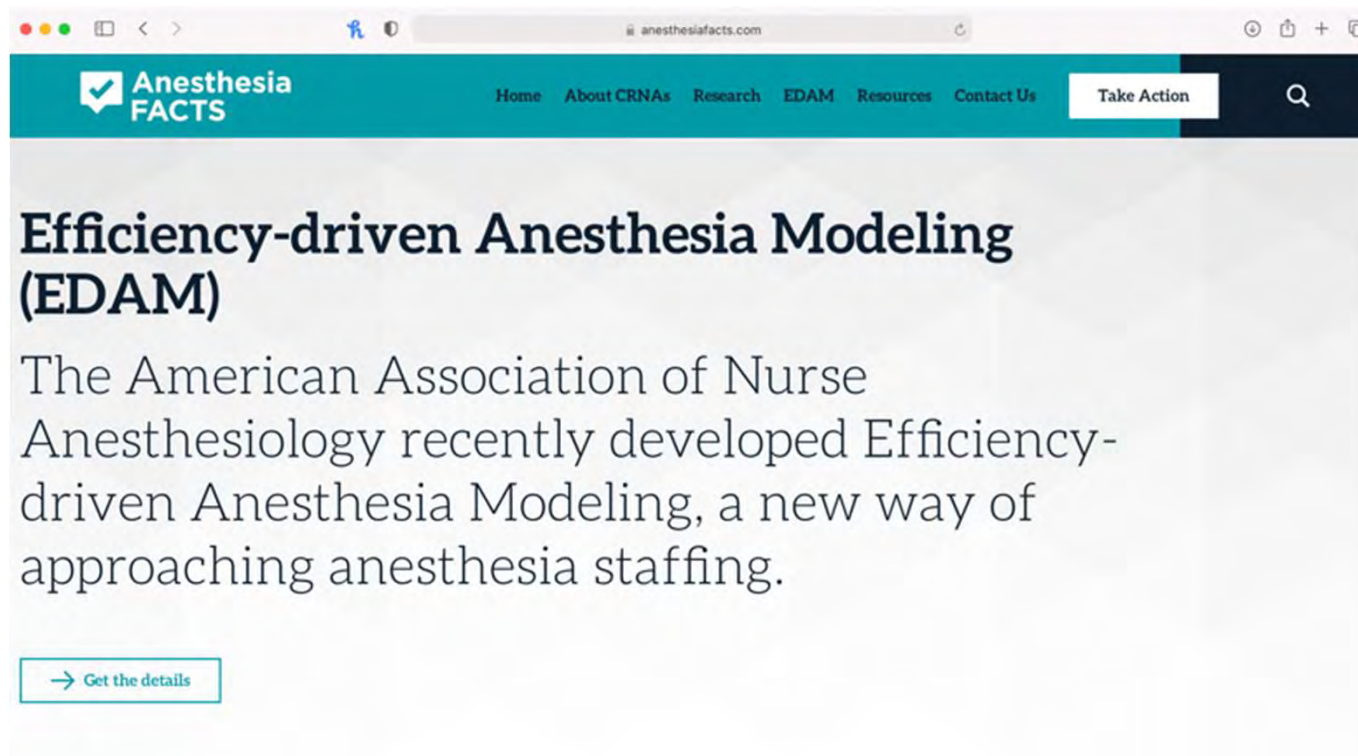
Summary of Evidence

	CRNA	MDA	AA
Effectiveness	YES	YES	YES
Efficiency	YES	NO	NO
Equity	YES	NO	Maybe (by increase in providers)

Worth vs Value

- “Know your **worth**”
- Worth is the **cost** of a good or service
- If you can not calculate your “worth”, take a course or find a mentor
- “Create your **Value**”
- Value is the **Importance** of a good or service
- If you can not articulate your “value” reflect upon it- or- improve what you offer

EDAM A NEW WAY OF LOOKING AT ANESTHESIA STAFFING



GET THE FACTS

GET TO KNOW

EFFICIENCY-DRIVEN ANESTHESIA MODELING

American Association of Nurse Anesthesiology (AANA) recently developed Efficiency-driven Anesthesia Modeling, a new way of approaching anesthesia staffing that:

- Organizes variables unique to an individual healthcare facility or health system while assessing requirements for best practices
- Limits duplication of services, improves effectiveness, increases access and reduces costs
- Reevaluates current anesthesia models to improve safe practice, cost effectiveness and accessibility

ADDRESSING CONCERNS OF HEALTHCARE SYSTEMS

Effectiveness

Studies show that increasing CRNA involvement and reducing restrictions on CRNA-provided services results in care as safe and equitable to that delivered by physician anesthesiologists or in more restrictive models.

Efficiency

Because Efficiency-driven Anesthesia Modeling uses CRNA providers, it may reduce (or even eliminate) the financial burden placed on facilities, help reduce unnecessary healthcare spending and reflect appropriate anesthesia staffing to meet a facility's patient and surgical needs.

Equity

CRNAs provide most anesthesia services in rural America and often work in areas with vulnerable populations. CRNA care may result in cost savings and reallocation of budget dollars to additional coverage for anesthesia services and/or other crucial healthcare areas.

ACTION NEEDED

CRNAs are ready to provide effective, more efficient, and equitable anesthesia care. Stakeholders are strongly encouraged to take the additional steps toward making anesthesia care delivery more cost-effective and accessible.



Understand your state's practice laws for the anesthesia department and CRNAs.



Review your facility's medical or professional bylaws, rules and regulations, and anesthesia policies that may restrict efficiency. Work to eliminate restrictions that exceed Federal and State laws and that create practice barriers for CRNAs.



Understand community interest and stakeholders' concerns.



Know how to evaluate your anesthesia business and take back control.

As research demonstrates, CRNAs are integral to a high-value anesthesia care delivery approach where quality and safety are emphasized, and costs are reduced. The American Association of Nurse Anesthesiology (AANA) believes Efficiency-driven Anesthesia Modeling is ideally suited to address key concerns of healthcare systems and the public policy principles of effectiveness, efficiency, and equity.¹

EFFECTIVENESS

A robust and comprehensive literature search on the safety and quality of CRNA-delivered care supports increasing CRNA involvement and reducing barriers and restrictions on the services CRNAs provide. Studies repeatedly establish that CRNAs deliver care that is as safe and equitable to that delivered by physician anesthesiologists or in more restrictive medical direction models.²⁻⁴ No evidence exists to suggest that greater reliance on CRNAs would in any way compromise patient safety or reduce quality.



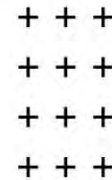
EFFICIENCY

Delivery models that utilize CRNA providers, including the model where CRNAs practice alone, are the most cost-effective option.⁵ Efficiency-driven Anesthesia Modeling may reduce, or in some cases eliminate, the substantial financial burden placed on facilities and encourage reductions in unnecessary healthcare spending. Reductions in healthcare spending might include, for example, removing hefty financial stipends for contracted anesthesia services or eliminating duplication of anesthesia services by both a CRNA and a physician anesthesiologist. This modeling reflects appropriate anesthesia staffing to meet the patient and surgical needs of the facility. Eliminating unnecessary duplication of services or administrative signoffs by physician anesthesiologists that cause delays in delivering care may improve anesthesia service availability across the facility without increasing costs.



EQUITY

CRNAs provide the majority of anesthesia services in rural America⁶ and have a greater presence in areas with vulnerable populations including Medicaid recipients, the uninsured, and the unemployed.⁷ Increased use of CRNAs may create cost savings that can be redistributed to provide additional coverage for anesthesia services and other areas.^{8,9} Facilities serving disadvantaged populations, struggling to attract high-cost physician anesthesiologists, or burdened by expensive financial subsidies could be well-served by utilizing Efficiency-driven Anesthesia Modeling.

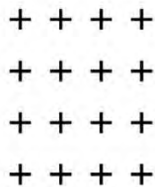


AANA Statement on

Efficiency-driven Anesthesia Modeling

OVERVIEW

“The Efficiency Driven Anesthesia Model identifies the optimal distribution of anesthesia providers while maintaining quality and increasing patient access. The model engages both CRNAs and physician anesthesiologists practicing to their full scope of practice, education, and licensure while supporting flexibility to match local demand and financial capacity. This limits duplication of services, improves effectiveness, increases access, and reduces costs.”



AANA STATEMENT ON EFFICIENCY-DRIVEN ANESTHESIA MODELING

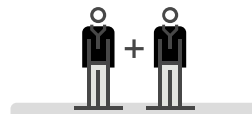
Healthcare facilities and health systems are looking for strategies to decrease expenses while maintaining quality and improving access to care. Anesthesia services are often a primary concern for healthcare administrators due to rising costs and the limited availability of providers. Efficiency-driven Anesthesia Modeling is one method to help organize the variables that are unique to a facility's needs as it simultaneously assesses its requirements for "best practices."

Efficiency-driven Anesthesia Modeling provides a decision-making framework adopted from the science of public policy. Efficiency modeling identifies the most appropriate anesthesia care delivery system for the location while balancing the principles of efficiency, effectiveness, and equity.¹ Efficiency-driven Anesthesia Modeling emphasizes maximizing available resources by utilizing anesthesia provider staffing efficiencies as a central objective.

An anesthesia department's efficiency assessment should begin by identifying a delivery model that is the most appropriate for the facility. Anesthesia delivery models to consider are:

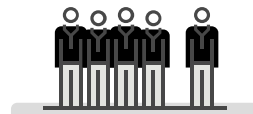
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**The Consultative/
Collaborative model** with
physicians and CRNAs to
optimize the business value of
anesthesia services,



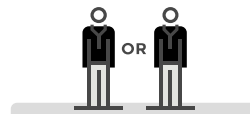
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**Medical Direction with
up to 1:4 physician
anesthesiologist/CRNA** ratios
and the Tax Equity and Fiscal
Responsibility Act of 1982
(TEFRA) requirements, and



3

**Solo CRNA or Solo Physician
Anesthesiologist.**



Three Models from Which to Choose

Consultative/Collaborative

1 CONSULTATIVE/COLLABORATIVE



CONSULTATIVE/COLLABORATIVE MODEL WITH PHYSICIANS AND CRNAs TO OPTIMIZE THE BUSINESS VALUE OF ANESTHESIA SERVICES

The Consultative/Collaborative (CC) model is designed to promote professional cooperation as well as create the most value for patients. It does not prioritize licensure like the anesthesia care team (ACT) model, but instead it focuses on maintaining quality, maximizing efficiencies, and increasing patient/surgeon access. In the CC model, all anesthesia providers are clinically autonomous and encouraged to use their full skill set and licensure in caring for patients. Recognizing provider value and autonomy is critical for effective interprofessional collaboration and to develop an anesthesia care model that maximizes effectiveness.

The CC begins by determining the number of anesthetizing locations which are staffed with CRNAs. Then, based on local factors, the number of physician anesthesiologist team members desired to support patient throughput is determined. This creates an anesthesia care model that is completely flexible and based on patient need. In the CC model providers are free to adjust the workflow to match demand, without fear of violating regulations and arbitrary billing requirements. This flexibility also allows providers to spend more time focused on patient care than arbitrary billing activities.

REFERENCES

1. Hoyer RL, Quatro TA, Jordan L, White N, et al. Anesthesia, Research, and Anesthesia Practice Models: Key Studies. *J Safety and Cost-Effectiveness Policy*. 2022;20(2):185-204.

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Medical Direction

2 MEDICAL DIRECTION



MEDICAL DIRECTION WITH UP TO 1:4 PHYSICIAN ANESTHESIOLOGIST/CRNA RATIOS AND THE TAX EQUITY AND FISCAL RESPONSIBILITY ACT OF 1982 (TEFRA) REQUIREMENTS

The American Society of Anesthesiologists endorses a model with physician anesthesiologists heavily involved in key portions of every anesthetic procedure. The anesthesia care team (ACT) model has multiple disadvantages when developing efficiency-driven anesthesia services. The ACT, with its explicit hierarchical physician-led structure, artificially restricts the contributions of CRNAs by not utilizing all available anesthesia providers to the full extent of their training and licensure, which ultimately increases healthcare costs. For example, in the ACT model, labor costs are inflated by mandating a maximum ratio of 1:4 physician anesthesiologist to CRNAs. Although the ACT model appears to provide enough anesthesia staffing, it actually limits access to operating room time for patients and surgeons because the physician anesthesiologists do not staff rooms. Resources that could be allocated for additional CRNAs to open more operating rooms are instead used on highly compensated physician anesthesiologists who provide no direct patient care. Furthermore, there is no scientific evidence that the ACT model increases patient safety or quality of care, but there is strong evidence that the ACT model increases costs to the healthcare system.¹

Another consideration is that care delivered through a Medical Direction model is reimbursed

under Medicare Part B and is subject to the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) regulations. TEFRA requires physician anesthesiologists to document their involvement in all seven key portions of an anesthetic delivery. Failure to meet all seven steps disqualifies the anesthesiologist from billing for medical direction. Further, the Medical Direction model is subject to potential lawsuits under the False Claims Act when the strict requirements associated with TEFRA regulations for medical direction are not met or not documented under Medicare Part B regulations. There are many examples of False Claims cases where the hospital and/or anesthesia group has been implicated in fraud due to failed Medical Direction billing.

The ACT model often prevents CRNAs from performing techniques they are fully qualified to perform such as peripheral nerve block or other pain procedures. Such restrictions may offer reimbursement-related advantages to anesthesiologists.¹ However, they not only undermine the value CRNAs offer but also may affect the ability to recruit and retain CRNA staff. Restrictions on clinical autonomy for CRNAs is associated with lower job satisfaction, increased compliance risks under TEFRA, and decreased efficiency when lower ratios of CRNAs to physicians are used to reduce those risks.¹

REFERENCES

1. Cohen L, Seltzer J, et al. Anesthesia Care Models: A Review of the Literature. *Anesthesiology*. 2021;133(1):1-10. <https://doi.org/10.1093/aesop/akaa015>.
2. Thomas J, Hoyer RL, et al. Anesthesia Care Models: A Review of the Literature. *Anesthesiology*. 2021;133(1):1-10. <https://doi.org/10.1093/aesop/akaa015>.
3. Thomas J, Hoyer RL, et al. Anesthesia Care Models: A Review of the Literature. *Anesthesiology*. 2021;133(1):1-10. <https://doi.org/10.1093/aesop/akaa015>.
4. Thomas J, Hoyer RL, et al. Anesthesia Care Models: A Review of the Literature. *Anesthesiology*. 2021;133(1):1-10. <https://doi.org/10.1093/aesop/akaa015>.
5. Thomas J, Hoyer RL, et al. Anesthesia Care Models: A Review of the Literature. *Anesthesiology*. 2021;133(1):1-10. <https://doi.org/10.1093/aesop/akaa015>.

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Independent Practice

3 CRNA OR PHYSICIAN ANESTHESIOLOGIST INDEPENDENT



CRNA OR PHYSICIAN ANESTHESIOLOGIST INDEPENDENT

In certain circumstances, some care settings function best with a single anesthesia provider working independently or as part of a team made up of only CRNAs or physician anesthesiologists. Historically, lower volume facilities, particularly in rural areas, are more likely to use CRNA-only groups. This single provider model is being rapidly adopted at urban facilities in nonhospital-based settings such as ambulatory surgical centers (ASCs) and physician offices. Given the shorter duration of ambulatory procedures and rapid turnover at these locations, facilities are quickly experiencing the benefits of an all-CRNA staff. Eliminating anesthesia providers not involved in direct patient care allows ASCs and physician offices to hire additional direct-care staff to gain efficiencies while increasing patient, surgeon, and staff satisfaction.

In large facilities, anesthesia demands are spreading beyond the walls of the main operating room suite, to areas referred to as nonoperating room anesthesia (NORA). NORA allows anesthesia providers to assist in labor and delivery, gastroenterology, radiology, and other office-based procedures. By implementing

efficiency-based anesthesia modeling, facilities are given flexibility to apply the appropriate anesthesia model accordingly. The ACT or collaborative model of anesthesia delivery may not be clinically necessary or financially sustainable without a sizeable number of cases running simultaneously. If therefore an independent provider model may be more appropriate.

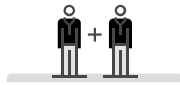
Medicare regulations authorize CRNAs to practice independent of a physician anesthesiologist. Facilities that want to establish anesthesia practice models without staffing physician anesthesiologists can do so. Alternatively, facilities may opt for using both physician anesthesiologists and CRNAs with each provider practicing independently. At the core, efficiency-driven anesthesia modeling provides freedom to implement whatever model meets the local need most "efficiently."

REFERENCES

1. Cohen L, Seltzer J, et al. Anesthesia Care Models: A Review of the Literature. *Anesthesiology*. 2021;133(1):1-10. <https://doi.org/10.1093/aesop/akaa015>.
2. Thomas J, Hoyer RL, et al. Anesthesia Care Models: A Review of the Literature. *Anesthesiology*. 2021;133(1):1-10. <https://doi.org/10.1093/aesop/akaa015>.
3. Thomas J, Hoyer RL, et al. Anesthesia Care Models: A Review of the Literature. *Anesthesiology*. 2021;133(1):1-10. <https://doi.org/10.1093/aesop/akaa015>.
4. Thomas J, Hoyer RL, et al. Anesthesia Care Models: A Review of the Literature. *Anesthesiology*. 2021;133(1):1-10. <https://doi.org/10.1093/aesop/akaa015>.
5. Thomas J, Hoyer RL, et al. Anesthesia Care Models: A Review of the Literature. *Anesthesiology*. 2021;133(1):1-10. <https://doi.org/10.1093/aesop/akaa015>.

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**CONSULTATIVE/COLLABORATIVE MODEL**

WITH PHYSICIANS AND CRNAs TO OPTIMIZE THE BUSINESS VALUE OF ANESTHESIA SERVICES

The Consultative/Collaborative (CC) model is designed to promote professional cooperation as well as create the most value for patients.¹ It does not prioritize licensure like the anesthesia care team (ACT) model, but instead it focuses on maintaining quality, maximizing efficiencies, and increasing patient/surgeon access. In the CC model, all anesthesia providers are clinically autonomous and encouraged to use their full skill set and licensure in caring for patients. Recognizing provider value and autonomy is critical for effective interprofessional collaboration and to develop an anesthesia care model that maximizes effectiveness.

The CC begins by determining the number of anesthetizing locations which are staffed with CRNAs. Then, based on local factors, the number of physician anesthesiologist team members desired to support patient throughput is determined. This creates an anesthesia care model that is completely flexible and based on patient need. In the CC model providers are free to adjust the workflow to match demand, without fear of violating regulations and arbitrary billing requirements. This flexibility also allows providers to spend more time focused on patient care than arbitrary billing activities.

By focusing on value instead of politics, anesthesia practice models involving collaboration among CRNAs and physicians allow maximum efficiency for patients and facilities while remaining responsive to facility norms and traditions. This renewed focus on value is why many facilities are abandoning models that restrict provider autonomy or dictate staffing ratios, both of which only increase healthcare spending with no evidence of benefit to the patient or health systems.

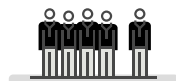
Legally CRNAs and physician anesthesiologists both have statutory authority to practice independently. Nevertheless, local communities and individual practice settings may choose to structure their anesthesia delivery models around legacy policies particular to the facility. Although surgeons and staff may be accustomed to certain staffing arrangements in the operating room environment and their preferences should be acknowledged and considered, these decisions may need to be reevaluated when determining the anesthesia care model most effective for the facility. Such decisions should be driven by appropriate clinically based evidence and organizational needs, not professional politics.

REFERENCES

1. Hoyem RL, Qurashi JA, Jordan L, Wiltsie Nicely KL. Advocacy, Research, and Anesthesia Practice Models: Key Studies of Safety and Cost-Effectiveness. *Policy Polit Nurs Pract*. 2019;20(4):193-204.

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MEDICAL DIRECTION

WITH UP TO 1:4 PHYSICIAN ANESTHESIOLOGIST/CRNA RATIOS AND THE TAX EQUITY AND FISCAL RESPONSIBILITY ACT OF 1982 (TEFRA) REQUIREMENTS

The American Society of Anesthesiologists endorses a model with physician anesthesiologists heavily involved in key portions of every anesthetic procedure. The anesthesia care team (ACT) model has multiple disadvantages when developing efficiency-driven anesthesia services. The ACT, with its explicit hierarchical physician-led structure, artificially restricts the contributions of CRNAs by not utilizing all available anesthesia providers to the full extent of their training and licensure, which ultimately increases healthcare costs. For example, in the ACT model, labor costs are inflated by mandating a maximum ratio of 1:4 physician anesthesiologist to CRNAs. Although the ACT model appears to provide enough anesthesia staffing, it actually limits access to operating room time for patients and surgeons because the physician anesthesiologists do not staff rooms. Resources that could be allocated for additional CRNAs to open more operating rooms are instead used on highly compensated physician anesthesiologists who provide no direct patient care. Furthermore, there is no scientific evidence that the ACT model increases patient safety or quality of care¹, but there is strong evidence that the ACT model increases costs to the healthcare system.²

Another consideration is that care delivered through a Medical Direction model is reimbursed

under Medicare Part B and is subject to the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) regulations. TEFRA requires physician anesthesiologists to document their involvement in all seven key portions of an anesthetic delivery. Failure to meet all seven steps disqualifies the anesthesiologist from billing for medical direction. Further, the Medical Direction model is subject to potential lawsuits under the False Claims Act when the strict requirements associated with TEFRA regulations for medical direction are not met or not documented under Medicare Part B regulations. There are many examples of False Claims cases where the hospital and/or anesthesia group has been implicated in fraud due to failed Medical Direction billing.

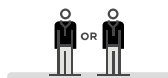
The ACT model often prevents CRNAs from performing techniques they are fully qualified to perform such as peripheral nerve block or other pain procedures. Such restrictions may offer reimbursement-related advantages to anesthesiologists.³ However, they not only undermine the value CRNAs offer but also may affect the ability to recruit and retain CRNA staff. Restrictions on clinical autonomy for CRNAs is associated with lower job satisfaction, increased compliance risks under TEFRA, and decreased efficiency when lower ratios of CRNAs to physicians are used to reduce those risks.⁴

REFERENCES

1. Lewis SR, Nicholson A, Smith AF, Alderson P. Physician anaesthetists versus non-physician providers of anaesthesia for surgical patients. *Cochrane Database Syst Rev*. 2014;(7):CD010357.
2. Conrath L, Hogan P, Schroeder C, Simonsen B, Quraishi J. Cost Effectiveness of Anesthesia Providers and Implications of Scope of Practice in a Medicare Population. *Nurs Econ*. 2018;36(2):67-73.
3. Hoyem RL, Quraishi JA, Jordan L, Wiltse Nicely KL. Advocacy, Research, and Anesthesia Practice Models: Key Studies of Safety and Cost-Effectiveness. *Policy Polit Nurs Pract*. 2019;20(4):193-204.
4. Negrusa S, Hogan P, Jordan L, et al. Work patterns, socio-demographic characteristics and job satisfaction of the CRNA workforce - Findings from the 2019 AANA survey of CRNAs. *Nursing Outlook*. 2021;69(3):P370-379.

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CRNA OR PHYSICIAN ANESTHESIOLOGIST INDEPENDENT

In certain circumstance, some care settings function best with a single anesthesia provider working independently, or as part of a team made up of only CRNAs or physician anesthesiologists.¹ Historically, lower volume facilities, particularly in rural areas, are more likely to use CRNA-only groups.² This single provider model is being rapidly adopted at urban facilities in non-hospital-based settings such as ambulatory surgical centers (ASCs) and physician offices. Given the shorter duration of ambulatory procedures and rapid turnover at these locations, facilities are quickly experiencing the benefits of an all-CRNA staff. Eliminating anesthesia providers not involved in direct patient care allows ASCs and physician offices to hire additional direct-care staff to gain efficiencies while increasing patient, surgeon, and staff satisfaction.

In large facilities, anesthesia demands are spreading beyond the walls of the main operating room suite, to areas referred to as nonoperating room anesthesia (NORA). NORA allows anesthesia providers to assist in labor and delivery, gastroenterology, radiology, and other office-based procedures. By implementing

efficiency-based anesthesia modeling, facilities are given flexibility to apply the appropriate anesthesia model accordingly. The ACT or collaborative model of anesthesia delivery may not be clinically necessary or financially sustainable without a sizeable number of cases running simultaneously,^{3,4} therefore an independent provider model may be more appropriate.

Medicare regulations authorize CRNAs to practice independent of a physician anesthesiologist. Facilities that want to establish anesthesia practice models without staffing physician anesthesiologists can do so. Alternatively, facilities may opt for using both physician anesthesiologists and CRNAs with each provider practicing independently. At the core, efficiency-driven anesthesia modeling provides freedom to implement whatever model meets the local need most “efficiently.”

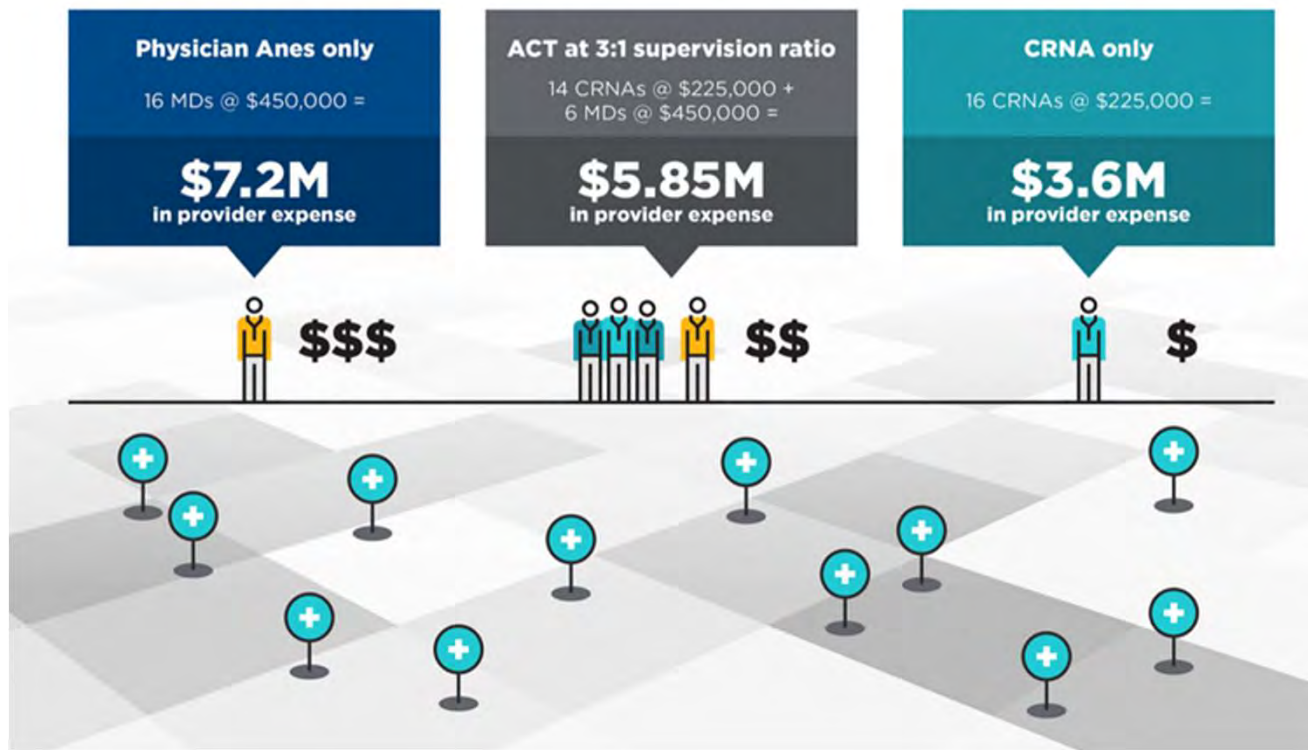
REFERENCES

1. Coomer N, Mills A, Beadles C, Gillen E, Chew R, Quraishi J. Anesthesia Staffing Models and Geographic Prevalence Post-Medicare CRNA/Physician Exemption Policy. *Nurs Econ*. 2019;37(2):86-91.
2. Mills A, Sorensen A, Gillen E, et al. Quality, Costs, and Policy: Factors Influencing Choice of Anesthesia Staffing Models. *J Health Manag*. 2020;65(1):45-60.
3. Cintina I, Hogan P, Schroeder C, Simonson B, Quraishi J. Cost Effectiveness of Anesthesia Providers and Implications of Scope of Practice in a Medicare Population. *Nurs Econ*. 2018;36(2):57-73.
4. Hogan PF, Seifert RF, Moore CS, Simonson BE. Cost effectiveness analysis of anesthesia providers. *Nurs Econ*. 2010;28(3):159-169.

Cost of 3 Anesthesia Staffing Models

in 12 concurrent locations

Staffing needs are an average salary including coverage for vacation days, call shifts and post call days off.





Certified Registered Nurse Anesthetist **CRNA** **FAST FACTS**

1 There is no statistically significant difference in the risk of anesthesia complications based on the degree of restrictions placed on CRNAs by state SOP laws. (Negrusa et al, Medical Care Journal, 2016)

2 There is no difference in patient outcomes when anesthesia services are provided by CRNAs, physicians, or CRNAs supervised by physicians. (Dulisse, 2010 – Health Affairs)

3 Nurse anesthesia care is 25 percent more cost effective than the next least costly anesthesia delivery model. (Hogan, 2016–Nursing Economic\$)

4 Practicing in every setting, with and without anesthesiologists, CRNAs ensure patient access to healthcare and predominate in rural and other medically underserved areas.

5 Researchers studying anesthesia safety found no differences in care between CRNAs and anesthesiologists. (Lewis, 2014-Cochrane Database of Systematic Reviews)

- Nurse anesthetists have been providing anesthesia to patients in the United States for more than 150 years.
- CRNAs are advanced practice registered nurses who administer more than **45 million anesthetics** to patients each year. Nearly 53,000 U.S. nurse anesthetists and student nurse anesthetists are members of the American Association of Nurse Anesthesiology (AANA).
- In some states, CRNAs are the **sole anesthesia professionals in nearly 100% of rural hospitals**, ensuring patient access to obstetrical, surgical, trauma stabilization and pain management services.
- CRNAs have been **recognized Medicare Part B providers** since 1986.
- **CRNAs work in every setting in which anesthesia is delivered**, including hospitals, ambulatory surgical centers and physician offices.
- Nurse anesthesia **predominates in Veterans Hospitals and in the U.S. Armed Forces**.
- **CRNA services include** pre-anesthesia evaluation, administering the anesthetic, monitoring and interpreting the patient's vital signs and managing the patient throughout surgery.

Learn more about CRNAs at **AANA.com**

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ACTION NEEDED

CRNAs are ready to provide effective, more efficient, and equitable anesthesia care. Efficiency-driven Anesthesia Modeling offers a foundation for reevaluating current anesthesia models furnished at the local level. This framework is purposely responsive to a facility's needs and based on evidence established in safe practice, cost effectiveness, and improved accessibility. Stakeholders are strongly encouraged to take the additional steps toward making anesthesia care delivery more cost-effective and accessible.



Understand your state's practice laws for the anesthesia department and CRNAs.

All 50 states have provisions to support CRNA practice without physician anesthesiologist's supervision.



Review your facility's medical or professional bylaws, rules and regulations, and anesthesia policies that may restrict efficiency. Work to eliminate restrictions that exceed federal and state law and that create practice barriers for CRNAs.

There is no evidence that safety is improved with such limitations. Bylaws dictate the anesthesia practice model, and often restrictive bylaws result in increased anesthesia subsidies.



Understand community interest and stakeholders' concerns.

Listen and ask questions to provide guidance to select the best Efficiency-driven Anesthesia Model that suits the locale's needs.



Know how to evaluate your anesthesia business and take back control. Do not be intimidated by anesthesia billing and regulations. If you do not understand the process, educate yourself by seeking resources and support systems.

For more information, please visit Efficiency-driven Anesthesia Modeling at www.AnesthesiaFacts.com

REFERENCES

1. Begley CE, Lairson DR, Balkrishnan R. Evaluating the Healthcare System: Effectiveness, Efficiency, and Equity, 3rd edition. (Aday LA, ed.). Health Administration Pr; 2004.
2. Dulisse B, Cromwell J. No harm found when nurse anesthetists work without supervision by physicians. *Health Aff (Millwood)*. 2010;29(8):1469-1475. doi:10.1377/hlthaff.2008.0966
3. Negrusa B, Hogan PF, Warner JT, Schroeder CH, Pang B. Scope of Practice Laws and Anesthesia Complications: No Measurable Impact of Certified Registered Nurse Anesthetist Expanded Scope of Practice on Anesthesia-related Complications. *Med Care*. 2016;54(10):913-920. doi:10.1097/MLR.0000000000000554
4. Beissel DE. Complication Rates for Fluoroscopic Guided Interlaminar Lumbar Epidural Steroid Injections Performed by Certified Registered Nurse Anesthetists in Diverse Practice Settings. *J Healthc Qual*. 2016;38(6):344-352. doi:10.1177/jhq.12093
5. Cintina I, Hogan P, Schroeder C, Simonson B, Quraishi J. Cost Effectiveness of Anesthesia Providers and Implications of Scope of Practice in a Medicare Population. *Nursing Economics*. 2018;36(2):67-73.
6. Martsoff GR, Baird M, Cohen CC, Koirala N. Relationship Between State Policy and Anesthesia Provider Supply in Rural Communities. *Med Care*. 2019;57(5):341-347. doi:10.1097/MLR.0000000000001106
7. Liao CJ, Quraishi JA, Jordan LM. Geographical Imbalance of Anesthesia Providers and its Impact On the Uninsured and Vulnerable Populations. *Nurs Econ*. 2015;33(5):263-270.
8. Callan V, Eshkevari L, Finder S, et al. Impact of COVID-19 Pandemic on Certified Registered Nurse Anesthetist Practice. *AANA J*. 2021;89(4):334-340.
9. Everson M, Wilbanks BA, Hranchook AM, et al. From the Operating Room to the Front Lines: Shared Experiences of Nurse Anesthetists During the Coronavirus Pandemic. *AANA J*. 2021;89(2):109-116.

C-Suite/Legislator Conversations

- The “33% problem”
- Payer Nondiscrimination
- No Surprise Billing
- Workforce Shortage
- Escalating Salaries
- Reimbursement Cuts



CRNAs for the win, now what?...

We need to spread the word on EDMA to facility admins, legislators and key stakeholders.

The last two years we have been exhibiting and speaking at:

- Beckers Hospital Conference
- Beckers ASC Conference
- American Hospital Association Annual Conference
- American Hospital Association Rural Conference
- Ambulatory Surgery Center Association
- And others....we need you to help get the word out as well!



References

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Abenstein JP, Long KH, McGlinch BP, Dietz NM. Is physician anesthesia cost-effective?. *Anesth Analg*. 2004;98(3)

Begley, Charles E, David Lairson, Robert O. Morgan, Paul J. Rowan, and Rajesh Balkrishnan. *Evaluating the Healthcare System: Effectiveness, Efficiency, and Equity*. , 2013

Dulisse B, Cromwell J. No harm found when nurse anesthetists work without supervision by physicians. *Health Aff (Millwood)*. 2010 Aug;29(8):1469-75.

Hogan PF, Seifert RF, Moore CS, Simonson BE. Cost effectiveness analysis of anesthesia providers. *Nurs Econ*. 2010 May-Jun;28(3):159-69. PMID: 20672538.

Lewis SR, Nicholson A, Smith AF, Alderson P. Physician anaesthetists versus non-physician providers of anaesthesia for surgical patients. *Cochrane Database of Systematic Reviews* 2014, Issue 7

Liao CJ, Quraishi JA, & Jordan LM. (2015). Geographical Imbalance of Anesthesia Providers and Its Impact on Uninsured and Vulnerable Populations. *Nurs Econ*. 33(5):263-270.

McCleery E, Christensen V, Peterson K, Humphrey L, Helfand M. Evidence Brief: The quality of care provided by advanced practice nurses. In: *VA Evidence Synthesis Program Evidence Briefs*. Washington (DC): Department of Veterans Affairs (US); September 2014.

Mesrobian JR, Howard O. The case for hiring anesthesiologist assistants. *American Society of Anesthesiologists*. 2012; 76(1).

Suitt MA, Simpson DE, Tillett J. Licensing anesthesiologist assistants will help not harm access to anesthesia care in rural areas. *North Carolina Society of Anesthesiologists*. <http://www.ncsoa.com/pdf/Rural%20Access.pdf>.

Thank you!

Questions and Answers

