



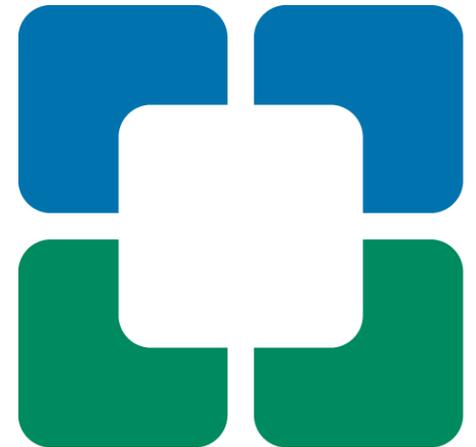
# Innovation in Resident Education: *Beyond Patient Care and Medical Knowledge*

ARANS Annual Meeting

May 2023

**Deborah L. Benzil, MD**

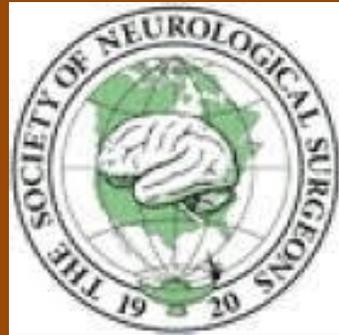
Vice Chair Neurosurgery





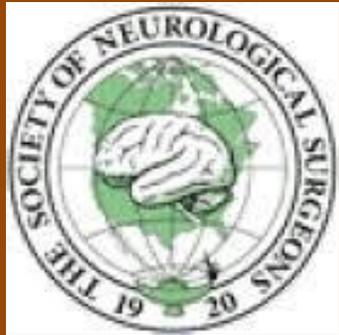


# Key Concepts



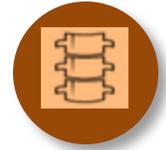
- ACGME, SNS, RRC and ABNS collaborate to optimize resident education and patient safety
- Traditionally, resident education has focused almost exclusively on patient care (operative technique) and medical knowledge
- Ideal resident education demands all competencies and milestones addressed

# Foundation of Training

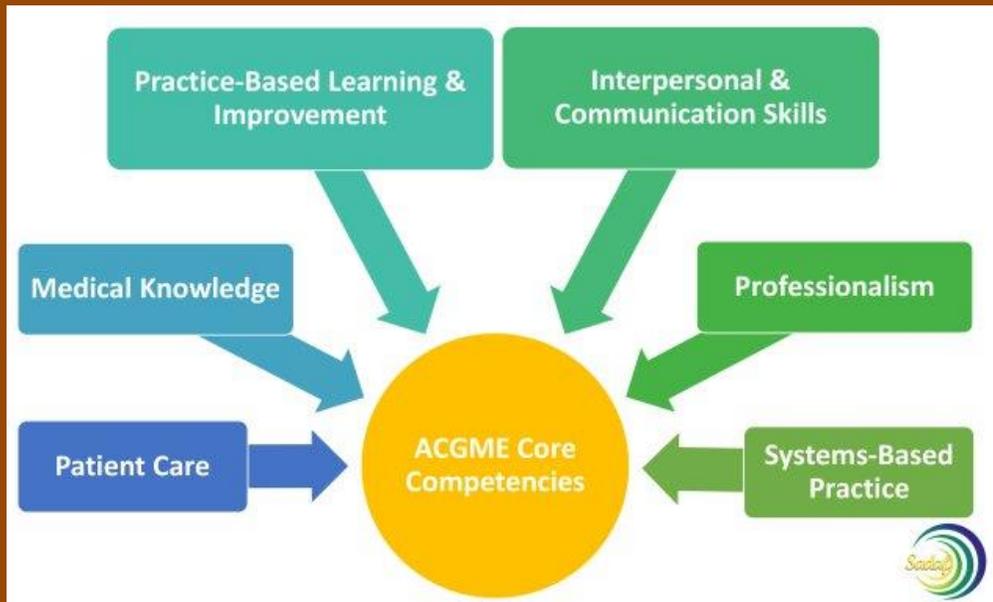


- Three Drivers
  - Core Competencies and Milestone
  - Didactic and experiential learning
  - Examination





# Core Competencies



- Medical Knowledge
- Patient Care
- Systems Based Practice
- Professionalism
- Interpersonal Skills  
Communication
- Practice Based Learning  
and Improvement

# Milestones (20 total)



- **Medical Knowledge**
  - Information gathering and interpretation
  - Critical Thinking
- **Systems**
  - Patient Safety
  - QI
  - Health Care Systems Awareness

# Milestones (20 total)



- Practice
  - Evidence based practice
  - Research
  - Mentorship and teaching
- Professionalism
  - Ethical behavior
  - Well-being
- Communication
  - Patient and family
  - Coordination of care





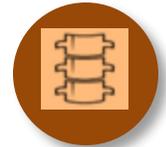
# Examination



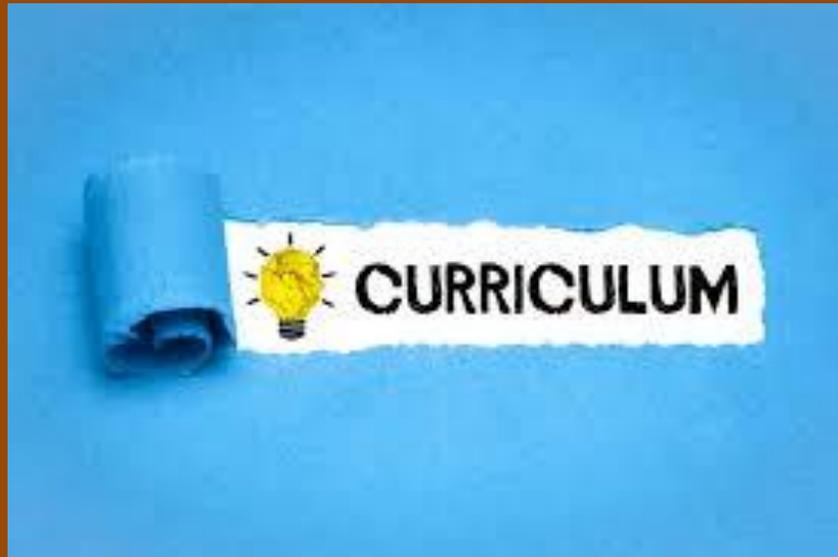
The American Board of Neurological Surgery®  
*Member Board of the American Board of Medical Specialties*

- ABNS questions
- CC





# Curriculum



- Almost 100% medical knowledge and patient care





# Bad Actors



- Too many in neurosurgery
- Need to instill best practices from the start





# Bad Actors

# Sexual Harassment

# 66%

**JNS**

CLINICAL ARTICLE

J Neurosurg 135:342–351, 2021

## Toward an understanding of sexual harassment in neurosurgery

Deborah L. Benzil, MD,<sup>1</sup> Karin M. Muraszko, MD,<sup>2</sup> Pranay Soni, MD,<sup>1</sup> Ellen L. Air, MD, PhD,<sup>3</sup> Katie O. Orrico, JD,<sup>4</sup> and James T. Rutka, MD, PhD<sup>5</sup>

<sup>1</sup>Department of Neurosurgery, Cleveland Clinic, Cleveland, Ohio; <sup>2</sup>Department of Neurosurgery, University of Michigan, Ann Arbor, Michigan; <sup>3</sup>Department of Neurosurgery, Henry Ford Health System, Detroit, Michigan; <sup>4</sup>Washington Office, American Association of Neurological Surgeons/Congress of Neurological Surgeons, Washington, DC; and <sup>5</sup>Department of Neurosurgery, The Hospital for Sick Children, University of Toronto, Ontario, Canada

**OBJECTIVE** The goal of this study was the creation and administration of a survey to assess the depth and breadth of sexual harassment across neurosurgery.



# Recidivism

Risk Factors for Dropping Out of Neurosurgical Residency Programs—A Survey Study  

Malte Ottenhausen, Stephanie Anetsberger, Jens Kleffmann, Patrick Schuss, Juergen Konczalla, Maximilian Krawagna, Jan-Karl Burkhardt, Matthias Reitz, Ran Xu, Lucia Albers, Georgios Ntoulas, Bernhard Meyer, Andreas Joedicke and Sandro M. Krieg

World Neurosurgery, 2018-12-01, Volume 120, Pages e100-e106, Copyright © 2018 Elsevier Inc.

- Relatively high in neurosurgery
- Highest in minorities
- Career satisfaction important
- Epidemic of burn-out

# Compelling Argument



- Literature also supports



Surgical Neurology  
Volume 50, Issue 2, August 1998, Pages 179-181



Socioeconomic Issues

## Socioeconomic issues and education of neurologic surgery residents in the United States

[David F Jimenez M.D. \(FACS\)](#)<sup>a</sup>

FULL TEXT ARTICLE

### Snapshot: Socioeconomic Competence in US Neurosurgery Residents

Remi A. Kessler, Raj K. Shrivastava, Sabrina L. Chen, Joshua Loewenstern, Karan M. Kohli, Kurt Yaeger, Constantinos Hadjipanayis, Joshua Bederson and Deborah L. Benzil

World Neurosurgery, 2019-10-01, Volume 130, Pages e874-e879, Copyright © 2019 Elsevier Inc.



# Evolution of Curriculum



- Columbia 1 year course
  - Pre-tested faculty and residents
  - Taught 11 lectures
  - Post-tested
  - Evaluated course/lectures



# Evolution of Curriculum



The emergency room calls the on-call neurosurgeon about a patient with back pain and foot weakness after a car accident. After discussion, he demands the patient be seen immediately. If the on-call neurosurgeon can't fulfill this request, who can assess the patient without an EMTALA violation?

1. *Another more experienced ER physician*
2. *An experienced trauma surgeon*
3. *A neurologist*
4. *A neurosurgical representative (NP or PA)*

# Evolution of Curriculum



Department Q holds monthly Morbidity and Mortality conference attended only by neurosurgeons. Statements or documents from this conference may be admissible in a medical malpractice case based on:

1. *State statute*
2. *Federal Statute*
3. *Hospital regulations*
4. *AMA rules*
5. *Community standards*



# Evolution of Curriculum



- Columbia 2-year course
  - Resident driven
  - Annual course evaluation
- Columbia 3-year course





# Evolution of Curriculum



## Year 1

- Quality and Patient Safety
- Conflict of Interest/Industry Relations
- MACRA-What you Need to Know
- Regulatory Madness
- Negotiation Essentials 1 Didactic
- Negotiation Essentials 2 Experiential
- Requirements after Graduation:  
Certification/MOC and beyond
- Work Life Balance



# Evolution of Curriculum



## Year 2

- Online Reputation Management
- Billing and Coding 1: Foundations of Medical Reimbursement
- Billing and Coding 2: Spine Essentials
- Words Matter: Effective Communication Didactic
- Words Matter: Effective Communication Experiential
- Where will you work 1: Essentials
- Where will you work 2: Types of Practice
- Informed Consent



# Evolution of Curriculum



## Year 3

- Billing and Coding 3: Cranial
- Basics of Ethics
- Conflict Resolution Starting Out in Practice 1: Rules of Engagement
- Starting Out in Practice 2: Building Programs/referrals
- Physician Extenders
- Making Effective Change
- Death and End of Life



# Evolution of Curriculum



- Cleveland Clinic 3-year course
  - Resident driven
  - Highly interactive
  - Hybrid model
  - New lectures requested and added





# Evolution of Curriculum



- Program evaluation
  - New elements required
- Added four new topics
  - QIPS (ECHO PDPQ driven)
  - AI/ML
  - Research
  - Well-being/career satisfaction





# Evolution of Curriculum



- New curriculum evaluation positive
  - Increased research interest
  - Lectures effective (4.58/5.0)
  - Lectures high quality (4.58/5.0)
  - Interactivity high (4.5/5.0)

# Evolution of Curriculum

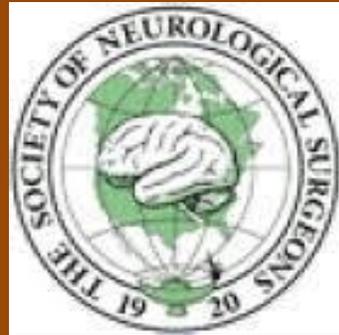


## Keys to Success

- Approach as QI endeavor
- Upfront engagement
- Leadership support
- Consider time closely
- Enthusiastic teachers
- Assess regularly
- Leverage whole system



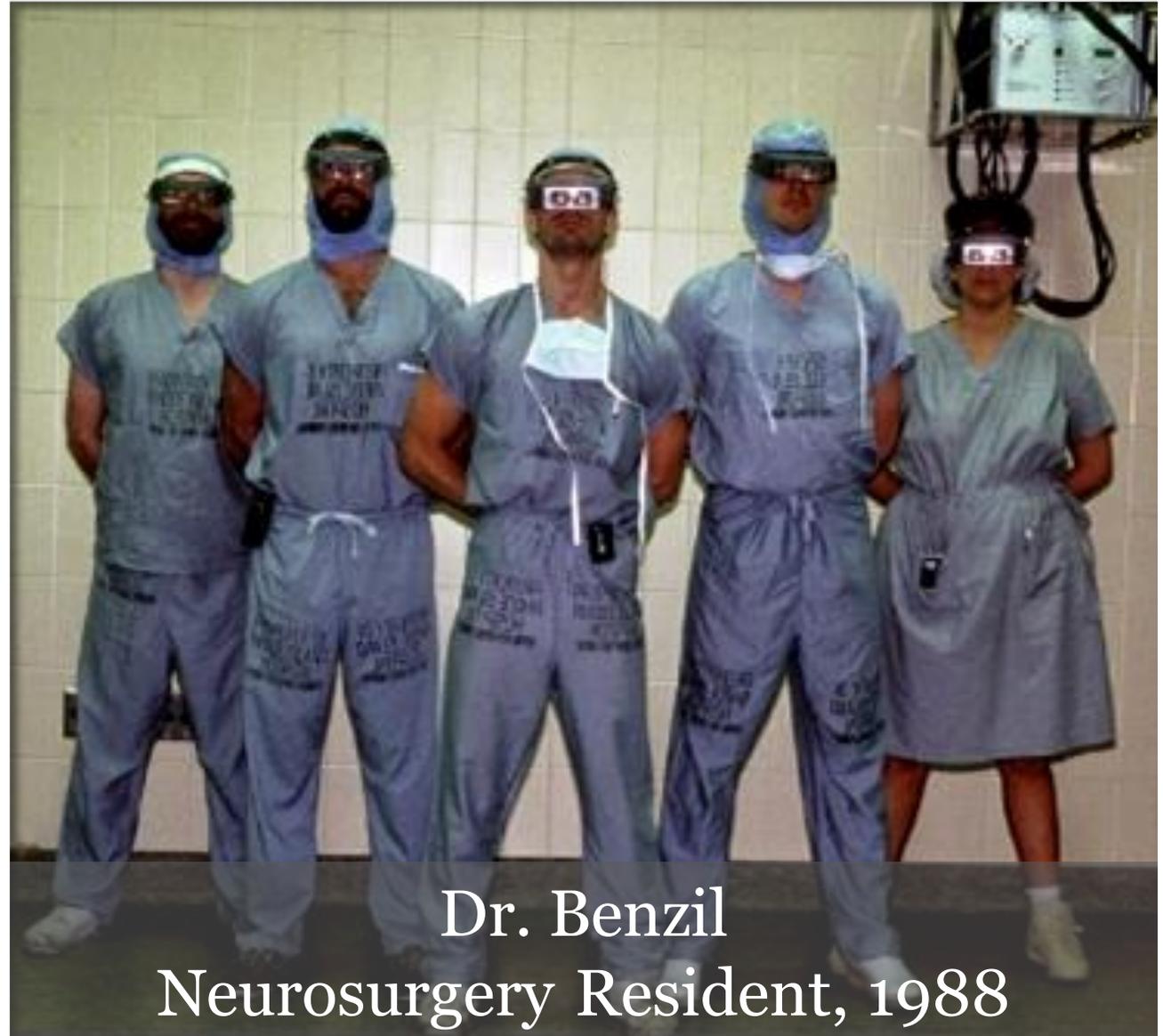
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# Evolution of Curriculum



Dr. Benzil  
Neurosurgery Resident, 1988