ACGME

Accreditation Council for Graduate Medical Education

MILESTONES REPORT 2024

Interventional Radiology - Independent

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EXECUTIVE SUMMARY

Since 2013, the Milestones have allowed for continuous tracking of skill and competence development of resident and fellow physicians throughout their graduate medical education (GME) program(s). The Milestones were designed to assist residency and fellowship programs in developing highly competent physicians and meet the 21st-century health care needs of the public. The report is a snapshot of Milestones ratings for the second half of the reporting period..

Osteopathic Recognition Milestones

For the second year, this report displays box plots for programs that use the Osteopathic Recognition Milestones. Osteopathic Recognition emerged from a collaborative agreement among the ACGME, American Osteopathic Association (AOA), and American Association of Colleges of Osteopathic Medicine (AACOM) as part of the transition to a single GME accreditation system. Launched in 2015, Osteopathic Recognition is available to ACGME-accredited programs that integrate Osteopathic Principles and Practice into the program's curriculum and demonstrate substantial compliance with the ACGME Osteopathic Recognition Requirements. The Osteopathic Recognition Milestones were first published in August 2015. The Osteopathic Recognition Committee (previously called the Osteopathic Principles Committee) first conferred Osteopathic Recognition in November 2015, allowing recognized programs to designate osteopathic residents/fellows and report Osteopathic Recognition Milestones in the ACGME Accreditation Data System (ADS). The 2.0 version of these Milestones was published in August 2021, with implementation in July 2022. See the **Osteopathic Recognition section** of the ACGME website for more resources.

Specialties that had a program(s) with Osteopathic Recognition during the 2023-2024 academic year:

- Anesthesiology
- Dermatology
- Diagnostic Radiology
- Emergency Medicine
- Family Medicine
- Internal Medicine
- Neurological Surgery
- Neurology
- Obstetrics and Gynecology
- Orthopaedic Surgery
- Otolaryngology – Head and Neck Surgery
- Pediatrics
- Physical Medicine and Rehabilitation
- Plastic Surgery
- Psychiatry
- Surgery
- Urology
- Internal Medicine-Pediatrics

Summary of Findings

1) Across all specialties, the number of subcompetencies assessed is provided (including Osteopathic Recognition). The ACGME accredited 13,393 programs across 146 specialties and subspecialties, while providing education and training for 162,644 residents and fellows, during the 2023-2024 academic year. An important note about a change reflected in this year's update: The number of accredited specialties and subspecialties is lower than it was in the past; this is because multidisciplinary subspecialties were counted multiple times. The ACGME's Accreditation Standards and the data teams determined that 146 more accurately reflects the number of specialties and subspecialties we accredit.

2) Across all specialties, box plots show the mean and median of Milestones ratings, as well as the variance, in general attainment across years.

3) Overall rates of straight-lining appear to be the same as in previous years.

The ACGME website includes many resources to help understand the purpose and effective use of the Milestones and Milestones ratings. These include the *Milestones Guidebook*, the *Milestones Guidebook for Residents and Fellows*, and Milestones FAQs, as well as the *Assessment Guidebook*, the *Implementation Guidebook*, and the *Clinical Competency Committee Guidebook*, all accessible on the **Resources page** of the Milestones section of the ACGME website.

Intended Audience

The intended audience for this report includes program directors and members of programs' Clinical Competency Committees (CCCs); leaders within specialty societies who oversee the development of national curricula; members of the ACGME Review and Recognition Committees who oversee accreditation and recognition of individual programs; and the residents, fellows, and faculty members in these programs. Other stakeholders who may benefit from this report include specialty boards, designated institutional officials (DIOs), policymakers, and the public.

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A Note on Specialty and Subspecialty Names

In this report, specialty and subspecialty names align with the way they appear in the specialty-/subspecialty-specific Program Requirements and in the Milestones documents; these names may differ from how they appear in the Accreditation Data System and ACGME Data Resource Book.

HOW TO USE THESE FINDINGS

As can be seen in the data, there is a wide range of attainment across Milestones. This variation is likely due to differences in curriculum and/or assessment practices. This should be viewed as welcome news, as it is a signal the Milestones data are providing useful information to drive continuous quality improvement (CQI) in GME. Since the launch of the Milestones initiative in 2013, numerous validity studies have been performed to understand the strengths and weaknesses while informing ongoing improvements (Milestones Bibliography 2023). Multiple research studies informed the creation of Milestones 2.0 for every specialty. More recently, studies have shown that when controlling for program variation (Park et al. 2024; Ekpenyong et al. 2022; Hamstra et al. 2019), there are correlations between Milestones assessments near the point of graduation and early-career patient care outcomes (Smith et al. 2024), and outcomes in terms of patients' satisfaction with their physicians (Han et al. 2023).

All ACGME-accredited specialties/subspecialties implemented Milestones 2.0 by the end of the 2023-2024 academic year. To learn more about the adoption dates for Milestones 2.0 by specialty, see the Completed Specialties and Subspecialties and Effective Dates found on the **Milestones Overview** page of the ACGME website. To learn more about how Milestones are developed and their intended purpose, see the Milestones Guidebook found on the **Milestone Resources page** of the ACGME website.

The table below provides some specific purposes and functions of the Milestones organized by stakeholder groups.

Table 1 – Purpose and Function of Milestones

CONSTITUENCY OR STAKEHOLDER	PURPOSE/FUNCTION
Residents and Fellows	• Provide a descriptive, developmental roadmap for education and training within a specialty or subspecialty • Increase transparency of performance requirements • Encourage informed self-directed assessment and self-directed learning • Facilitate better feedback • Facilitate development of individualized learning plans by residents and fellows
Residency and Fellowship Programs	• Guide curriculum and assessment tool development and improvements • Provide meaningful framework for the CCC (e.g., help create shared mental model) • Provide more explicit expectations of residents and fellows • Enhance opportunity for early identification of struggling learners • Early identification of advanced learners and the need to continuously challenge them
ACGME and the Public	• Accountability – report at an aggregated national level on competency outcomes • Build community for evaluation and research, with focus on CQI
Certification Boards	• Enable ongoing research to improve certification processes

METHODS

Every six months, the ACGME receives more than 3.8 million Milestones ratings of more than 162,000 learners from residency and fellowship programs in more than 140 specialties and subspecialties across the US, including Puerto Rico and the District of Columbia. The box plots reported in the following pages summarize these data.

OVERARCHING THEMES

Examining the dataset in terms of gradual progression of competence shows that during the 2023-2024 academic year:

1) Generally, across all specialties/subspecialties and all programs, learners show progressive attainment of milestones across time in their program;
2) Not all residents/fellows reach Level 4, which is an educational goal and not a requirement or mandate, by the time of graduation; and,
3) Each specialty/subspecialty shows variation in attainment of the specific milestones.

Research to date suggests the following possible reasons for these findings:

1) Meaningful differences in actual performance;
2) Differences in the complexity of the Milestones competency language as written for a particular specialty or subspecialty;
3) Differences in understanding and interpretation of the Milestones, especially for the non-Patient Care (PC) and Medical Knowledge (MK) Milestones;
4) Differences in clinical exposure in specific competencies of some residents/fellows in some programs;
5) Differences in the quality of assessment methods;
6) Differences in the types of assessment methods used to show attainment of a particular milestone;
7) Differences in the combinations of assessment tools used in a program of assessment; and,
8) Differences in CCC processes and approaches for determining milestone attainment.

Of course, many other factors may be at play, and these are the subject of ongoing research. The data should only be reported in the context of interpretive statements and assumptions relevant to the particular stakeholder group, (i.e., DIOs, program directors, residents/fellows, the public). It is important to remember that the Milestones are designed for use as formative assessments to be used in the spirit of CQI, and that Level 4 is an educational goal and not a requirement or mandate. To fully interpret and understand the results of Milestones analyses and validity studies, there must also be full awareness of the consequences, with appropriate diligence in providing context for proper interpretation of any rating result (Hubley and Zumbo 2011).

Straight-Lining Ratings

Straight-lining ratings are defined as a string of identical Milestones ratings for an individual learner across all subcompetencies. In the original vision of the ACGME's current accreditation model, it was assumed that performance across subcompetencies would vary based on contextual factors, curricular design, content of each subcompetency, and psychometric item response theory. For example, a learner would not necessarily be expected to have exactly the same ratings for the milestones in Patient Care, Interpersonal and Communication Skills, and Systems-Based Practice during a given six-month period. Accurate detection of true variation in ratings among subcompetencies would theoretically be useful for targeted feedback to each learner.

Method: The rate of straight-lining was calculated as follows: if any resident's or fellow's string of Milestone ratings was identical across all subcompetencies, the resident or fellow was assigned a value of "1;" otherwise, "0." The table provides the percentage of residents or fellows nationally who were assigned a value of "1" (meaning they had received the same rating for all their milestones).

Interpretation: Nationally, the ACGME is working to understand whether this straight-lining effect represents a true reflection of resident competence, or if CCCs may have difficulty in interpreting the specificity of each subcompetency for other reasons within local contexts (e.g., difficulty obtaining valid and defensible ratings through lack of resources). If a program notes high rates of straight-lining, it would be important for the program director and CCC to reflect on the causes and whether such a Milestones profile is an accurate assessment of the program's residents or fellows. Of note, it is theoretically possible that an individual learner could be assigned identical milestone ratings across all subcompetencies (e.g., straight-lining for Milestones in Level 4 can be a valid rating pattern for the senior-most residents who, at the time of graduation, have truly achieved Level 4 in all subcompetencies).

While all specialties and subspecialties have adopted the 2.0 version of their Milestones, this transition does not appear to have affected the overall rate of straight-lining at the national level. These issues continue to be the subject of ongoing qualitative studies with collaborators from various specialties and subspecialties.

Milestones 2.0

In response to the feedback received and research completed to date, the Milestones language has now been revised across most specialties and subspecialties to make it easier for program directors to understand and implement locally. Additionally, Milestones language was harmonized across specialties and subspecialties, for the competencies of Professionalism, Interpersonal and Communication Skills, Systems-Based Practice, and Practice-Based Learning and Improvement (Edgar, Roberts, and Holmboe 2018; Edgar et al. 2018).

Limitations

While the interpretations and conclusions that can be drawn from the data presented in this report are based on a single point in time (June 2024), trends for stability in the data patterns for academic year-end since June 2014 have recently been examined for the earliest reporting specialties and subspecialties. Most of the Milestones data show signs of stability across this period, which lends greater confidence to the potential interpretations and conclusions that can be drawn from them.

Future Directions

The Milestones data show interesting patterns of variation that require further research to understand their full implications. In the meantime, caution should be exercised in how these results are interpreted and communicated to various stakeholders.

Acknowledgments

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Table 2 – Number of Subcompetencies by Specialty

	Number of Subcompetencies						
Specialty/Subspecialty Name	**Total**	**PC**	**MK**	**SBP**	**PBLI**	**PROF**	**ICS**
Allergy and Immunology	19	4	3	4	2	3	3
Anesthesiology	23	10	2	3	2	3	3
Anesthesiology (Osteopathic Recognition)	7	2	1	1	1	1	1
Adult Cardiothoracic Anesthesiology	23	7	5	3	2	3	3
Critical Care Medicine (multidisciplinary)	19	5	2	3	2	3	4
Obstetric Anesthesiology	20	5	2	3	3	3	4
Pain Medicine (multidisciplinary)	21	6	2	3	3	4	3
Pediatric Anesthesiology	20	7	2	3	2	3	3
Pediatric Cardiac Anesthesiology	21	7	3	3	2	3	3
Regional Anesthesiology and Acute Pain Medicine	17	3	3	3	2	3	3
Colon and Rectal Surgery	27	13	2	3	2	4	3
Dermatology	21	8	2	3	2	3	3
Dermatology (Osteopathic Recognition)	7	2	1	1	1	1	1
Dermatopathology (multidisciplinary)	19	4	3	4	2	3	3
Micrographic Surgery and Dermatologic Oncology	18	4	2	4	2	3	3
Pediatric Dermatology	21	5	2	3	3	4	4
Emergency Medicine	22	8	2	4	2	3	3
Emergency Medicine (Osteopathic Recognition)	7	2	1	1	1	1	1
Emergency Medical Services	19	4	2	5	2	3	3
Medical Toxicology (multidisciplinary)	22	4	5	5	2	3	3
Pediatric Emergency Medicine (multidisciplinary)	24	9	2	4	2	4	3
Sports Medicine (multidisciplinary)	20	6	3	3	2	3	3
Undersea and Hyperbaric Medicine (multidisciplinary)	22	4	4	5	3	3	3
Family Medicine	19	5	2	4	2	3	3
Family Medicine (Osteopathic Recognition)	7	2	1	1	1	1	1
Clinical Informatics (multidisciplinary)	21	2	2	3	5	5	4
Geriatric Medicine (multidisciplinary)	22	6	2	4	2	4	4
Hospice and Palliative Medicine (multidisciplinary)	20	4	3	4	2	3	4
Sports Medicine (multidisciplinary)	20	6	3	3	2	3	3
Sports Medicine (multidisciplinary, Osteopathic Recognition)	7	2	1	1	1	1	1
Internal Medicine	21	6	3	3	2	4	3
Internal Medicine (Osteopathic Recognition)	7	2	1	1	1	1	1
Adult Congenital Heart Disease	19	5	2	3	2	3	4
Advanced Heart Failure and Transplant Cardiology	21	5	5	3	2	3	3
Cardiovascular Disease	17	4	2	3	2	3	3
Clinical Cardiac Electrophysiology	24	9	4	3	2	3	3
Clinical Informatics (multidisciplinary)	21	2	2	3	5	5	4
Critical Care Medicine	19	4	2	4	2	3	4
Endocrinology, Diabetes, and Metabolism	19	6	2	3	2	3	3
Gastroenterology	22	7	4	3	2	3	3
Geriatric Medicine (multidisciplinary)	22	6	2	4	2	4	4
Hematology and Medical Oncology	22	5	4	5	2	3	3

Table 2 – Number of Subcompetencies by Specialty

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Specialty/Subspecialty Name	**Total**	**PC**	**MK**	**SBP**	**PBLI**	**PROF**	**ICS**
Infectious Disease	23	3	6	5	2	4	3
Interventional Cardiology	17	3	3	3	2	3	3
Medical Oncology	21	5	3	5	2	3	3
Nephrology	22	7	3	4	2	3	3
Pulmonary Disease	19	4	2	4	2	3	4
Pulmonary Disease and Critical Care Medicine	20	5	2	4	2	3	4
Rheumatology	21	6	3	3	2	4	3
Sleep Medicine (multidisciplinary)	18	4	2	3	2	3	4
Transplant Hepatology	16	3	2	3	2	3	3
Medical Genetics and Genomics	17	3	3	3	2	3	3
Clinical Biochemical Genetics	19	4	2	5	2	3	3
Laboratory Genetics and Genomics	19	4	2	5	2	3	3
Medical Biochemical Genetics	16	3	2	3	2	3	3
Molecular Genetic Pathology (multidisciplinary)	22	3	4	6	3	3	3
Neurological Surgery	20	8	2	3	3	2	2
Neurology	27	12	2	4	2	3	4
Clinical Neurophysiology	28	9	5	4	2	3	5
Epilepsy	24	7	3	4	2	3	5
Neurocritical Care (multidisciplinary)	24	6	4	4	2	3	5
Neuroendovascular Intervention	20	3	4	5	2	3	3
Neurodevelopmental Disabilities	32	10	5	6	2	5	4
Neuromuscular Medicine (multidisciplinary)	27	10	4	4	2	3	4
Vascular Neurology	25	5	7	4	2	3	4
Child Neurology	26	10	4	3	2	3	4
Nuclear Medicine	22	5	5	4	2	3	3
Obstetrics and Gynecology	32	14	2	6	2	4	4
Obstetrics and Gynecology (Osteopathic Recognition)	7	2	1	1	1	1	1
Complex Family Planning	25	6	3	5	3	4	4
Gynecologic Oncology	27	5	8	4	3	3	4
Maternal-Fetal Medicine	26	5	4	6	3	4	4
Reproductive Endocrinology and Infertility	22	3	5	4	3	3	4
Urogynecology and Reconstructive Pelvic Surgery	28	7	8	3	3	3	4
Ophthalmology	20	6	3	3	2	3	3
Ophthalmic Plastic and Reconstructive Surgery	17	4	2	3	2	3	3
Orthopaedic Surgery	20	7	2	3	2	3	3
Orthopaedic Surgery (Osteopathic Recognition)	7	2	1	1	1	1	1
Adult Reconstructive Orthopaedic Surgery	18	5	2	3	2	3	3
Foot and Ankle Orthopaedic Surgery	21	6	4	3	2	3	3
Hand Surgery (multidisciplinary)	20	5	4	3	2	3	3
Musculoskeletal Oncology	18	3	2	3	3	3	4
Orthopaedic Sports Medicine	18	5	2	3	2	3	3
Orthopaedic Surgery of the Spine	19	6	2	3	2	3	3
Orthopaedic Trauma	21	5	5	3	2	3	3

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	Number of Subcompetencies						
Specialty/Subspecialty Name	**Total**	**PC**	**MK**	**SBP**	**PBLI**	**PROF**	**ICS**
Pediatric Orthopaedic Surgery	23	6	6	3	2	3	3
Osteopathic Neuromusculoskeletal Medicine	18	5	2	3	2	3	3
Otolaryngology – Head and Neck Surgery	23	9	3	3	2	3	3
Otolaryngology – Head and Neck Surgery (Osteopathic Recognition)	7	2	1	1	1	1	1
Neurotology	19	5	3	3	2	3	3
Pediatric Otolaryngology	19	6	2	3	2	3	3
Pathology (Anatomic and Clinical)	21	6	2	5	2	3	3
Blood Banking/Transfusion Medicine	23	4	6	5	2	3	3
Chemical Pathology	19	4	2	5	2	3	3
Clinical Informatics (multidisciplinary)	21	2	2	3	5	5	4
Cytopathology	21	6	2	5	2	3	3
Forensic Pathology	19	2	3	5	2	3	4
Hematopathology	23	4	6	5	2	3	3
Medical Microbiology	21	3	4	6	2	3	3
Neuropathology	20	4	3	5	2	3	3
Pediatric Pathology	19	4	2	5	2	3	3
Selective Pathology (Focused Anatomic)	19	4	2	5	2	3	3
Selective Pathology (Focused Clinical)	17	2	2	5	2	3	3
Selective Pathology (Surgical)	19	4	2	5	2	3	3
Pediatrics	22	5	2	6	2	4	3
Adolescent Medicine	25	6	2	6	2	4	5
Child Abuse Pediatrics	28	6	2	7	3	4	6
Clinical Informatics (multidisciplinary)	21	2	2	3	5	5	4
Developmental-Behavioral Pediatrics	24	5	4	6	2	4	3
Neonatal-Perinatal Medicine	26	8	2	6	2	4	4
Pediatric Cardiology	23	4	3	6	2	4	4
Pediatric Critical Care Medicine	23	5	2	6	2	4	4
Pediatric Emergency Medicine (multidisciplinary)	24	9	2	4	2	4	3
Pediatric Endocrinology	24	5	3	6	2	4	4
Pediatric Gastroenterology	24	7	2	6	2	4	3
Pediatric Hematology/Oncology	25	5	4	6	2	4	4
Pediatric Hospital Medicine	21	3	2	7	2	4	3
Pediatric Infectious Diseases	26	5	6	6	2	4	3
Pediatric Nephrology	26	9	2	6	2	4	3
Pediatric Pulmonology	21	4	2	6	2	4	3
Pediatric Rheumatology	25	7	3	6	2	4	3
Pediatric Transplant Hepatology	20	6	3	3	2	3	3
Sports Medicine (multidisciplinary)	20	6	3	3	2	3	3
Physical Medicine and Rehabilitation	24	8	2	4	2	5	3
Brain Injury Medicine (multidisciplinary)	23	6	3	4	2	5	3
Neuromuscular medicine	27	10	4	4	2	3	4
Pediatric Rehabilitation Medicine	24	8	2	4	2	5	3

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	Number of Subcompetencies						
Specialty/Subspecialty Name	**Total**	**PC**	**MK**	**SBP**	**PBLI**	**PROF**	**ICS**
Spinal Cord Injury Medicine	23	5	3	4	2	5	4
Sports Medicine (multidisciplinary)	20	6	3	3	2	3	3
Plastic Surgery - Independent	22	7	5	3	2	3	2
Craniofacial Surgery	18	4	4	3	2	3	2
Hand Surgery (multidisciplinary)	20	5	4	3	2	3	3
Plastic Surgery - Integrated	22	7	5	3	2	3	2
Public Health and General Preventive Medicine	20	4	5	3	3	3	2
Undersea and Hyperbaric Medicine	22	4	4	5	3	3	3
Preventive Medicine (Aerospace Medicine)	20	6	2	4	2	3	3
Preventive Medicine (Occupational Medicine)	21	6	3	4	2	3	3
Preventive Medicine (Public Health and General Preventive Medicine)	20	4	5	3	3	3	2
Psychiatry	21	6	4	3	2	3	3
Addiction Medicine (multidisciplinary)	16	2	3	3	2	3	3
Addiction Psychiatry	17	3	3	3	2	3	3
Child and Adolescent Psychiatry	23	7	5	3	2	3	3
Consultation-Liaison Psychiatry	16	3	2	3	2	3	3
Forensic Psychiatry	17	3	2	4	2	4	2
Geriatric Psychiatry	20	5	3	4	2	3	3
Radiation Oncology	21	8	2	3	2	3	3
Diagnostic Radiology	24	4	4	8	2	3	3
Abdominal Radiology	20	3	2	7	2	3	3
Musculoskeletal Radiology	22	3	3	8	2	3	3
Neuroendovascular Intervention	20	3	4	5	2	3	3
Neuroradiology	21	4	2	7	2	3	3
Nuclear Radiology	20	3	3	6	2	3	3
Pediatric Radiology	20	2	3	7	2	3	3
Interventional Radiology - Independent	24	5	3	7	2	4	3
Interventional Radiology - Integrated	31	6	6	10	2	4	3
Surgery	18	4	2	3	2	4	3
Surgery (Osteopathic Recognition)	7	2	1	1	1	1	1
Complex General Surgical Oncology	23	7	4	3	3	3	3
Pediatric Surgery	25	11	3	3	2	3	3
Surgical Critical Care	25	10	3	4	2	3	3
Vascular Surgery - Independent	28	8	5	6	2	4	3
Vascular Surgery - Integrated	28	8	5	6	2	4	3
Thoracic Surgery - Independent	23	8	3	3	2	4	3
Congenital cardiac surgery	17	3	2	3	2	4	3
Thoracic Surgery - Integrated	24	9	3	3	2	4	3
Urology	20	6	2	3	2	3	4
Urogynecology and Reconstructive Pelvic Surgery (multidisciplinary)	28	7	8	3	3	3	4

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Table 2 – Number of Subcompetencies by Specialty

	Number of Subcompetencies						
Specialty/Subspecialty Name	**Total**	**PC**	**MK**	**SBP**	**PBLI**	**PROF**	**ICS**
Pediatric Urology	21	6	3	3	2	3	4
Transitional Year	19	6	2	3	2	3	3
Transitional Year (Osteopathic Recognition)	7	2	1	1	1	1	1
Internal Medicine-Pediatrics	43	11	5	9	4	8	6

Note:

PC - Patient Care and Procedural Skills
MK - Medical Knowledge
SBP - Systems-Based Practice
PBLI - Practice-Based Learning and Improvement
PROF - Professionalism
ICS - Interpersonal and Communication Skills

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Table 3 – Number of Residents/Fellows by Year in Program

		Resident/Fellow Year						
Specialty/Subspecialty Name	**Total**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Allergy and Immunology	330	166	164					
Anesthesiology	7,497	1,626	2,031	1,954	1,886			
Anesthesiology (Osteopathic Recognition)	29	7	7	8	7			
Adult Cardiothoracic Anesthesiology	262	262						
Critical Care Medicine (multidisciplinary)	204	204						
Obstetric Anesthesiology	54	54						
Pain Medicine (multidisciplinary)	422	422						
Pediatric Anesthesiology	167	167						
Pediatric Cardiac Anesthesiology	14	14						
Regional Anesthesiology and Acute Pain Medicine	87	87						
Colon and Rectal Surgery	110	110						
Dermatology	1,639	558	542	536	3			
Dermatology (Osteopathic Recognition)	15	5	5	5				
Dermatopathology (multidisciplinary)	69	69						
Micrographic Surgery and Dermatologic Oncology	95	95						
Pediatric Dermatology	25	25						
Emergency Medicine (Three-Year Programs)	7,024	2,435	2,319	2,270				
Emergency Medicine (Four-Year Programs)	2,609	672	659	645	633			
Emergency Medicine (Four-Year Programs) (Osteopathic Recognition)	124	28	30	35	31			
Emergency Medical Services	111	111						
Medical Toxicology (multidisciplinary)	105	55	50					
Pediatric Emergency Medicine (multidisciplinary)	151	60	49	42				
Sports Medicine (multidisciplinary)	16	16						
Undersea and Hyperbaric Medicine (multidisciplinary)	13	13						
Family Medicine	15,023	5,225	4,990	4,808				
Family Medicine (Osteopathic Recognition)	1,749	572	606	571				
Clinical Informatics (multidisciplinary)	23	12	11					
Geriatric Medicine (multidisciplinary)	45	45						
Hospice and Palliative Medicine (multidisciplinary)	496	496						
Sports Medicine (multidisciplinary)	303	303						
Sports Medicine (multidisciplinary, Osteopathic Recognition)	12	12						
Internal Medicine	33,007	12,748	10,376	9,883				
Internal Medicine (Osteopathic Recognition)	386	136	130	120				
Adult Congenital Heart Disease	30	20	10					
Advanced Heart Failure and Transplant Cardiology	86	86						
Cardiovascular Disease	3,612	1,272	1,214	1,126				
Clinical Cardiac Electrophysiology	342	183	159					
Clinical Informatics (multidisciplinary)	74	47	27					
Critical Care Medicine	376	209	167					
Endocrinology, Diabetes, and Metabolism	745	386	359					
Gastroenterology	2,039	729	675	635				

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Table 3 – Number of Residents/Fellows by Year in Program

		Resident/Fellow Year						
Specialty/Subspecialty Name	**Total**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Gastroenterology (Gastroenterology/Transplant Hepatology Pathway)	27		8	19				
Geriatric Medicine (multidisciplinary)	264	264						
Hematology and Medical Oncology	2,197	784	721	692				
Infectious Disease	841	429	412					
Interventional Cardiology	377	377						
Nephrology	904	479	425					
Pulmonary Disease	58	32	26					
Pulmonary Disease and Critical Care Medicine	2,366	838	796	732				
Rheumatology	579	290	289					
Sleep Medicine (multidisciplinary)	229	229						
Transplant Hepatology	49	49						
Medical Genetics and Genomics	62	34	28					
Clinical Biochemical Genetics	10	6	4					
Laboratory Genetics and Genomics	84	38	46					
Medical Biochemical Genetics	14	14						
Molecular Genetic Pathology (multidisciplinary)	58	58						
Neurological Surgery	1,615	244	251	238	221	228	217	216
Neuroendovascular Intervention (multidisciplinary)	3	3						
Neurology	3,717	734	1,056	1,006	921			
Clinical Neurophysiology	148	148						
Epilepsy	155	155						
Neurocritical Care (multidisciplinary)	173	86	87					
Neuroendovascular Intervention (multidisciplinary)	5	3	2					
Neurodevelopmental Disabilities	33	10	7	7	9			
Neuromuscular Medicine (multidisciplinary)	96	96						
Vascular Neurology	207	207						
Child Neurology	493	157	169	167				
Nuclear Medicine	85	47	17	21				
Obstetrics and Gynecology	6,088	1,578	1,545	1,485	1,480			
Obstetrics and Gynecology (Osteopathic Recognition)	68	17	18	16	17			
Complex Family Planning	58	29	29					
Female Pelvic Medicine and Reconstructive Surgery (multidisciplinary)	168	61	56	51				
Gynecologic Oncology	248	90	81	77				
Maternal-Fetal Medicine	434	152	146	136				
Reproductive Endocrinology and Infertility	173	59	55	59				
Ophthalmology	1,769	210	523	525	511			
Ophthalmic plastic and reconstructive surgery	5	3	2					
Orthopaedic Surgery	4,544	947	926	899	898	874		
Orthopaedic Surgery (Osteopathic Recognition)	89	18	19	17	18	17		
Adult Reconstructive Orthopaedic Surgery	53	53						
Foot and Ankle Orthopaedic Surgery	18	18						

Table 3 – Number of Residents/Fellows by Year in Program

		Resident/Fellow Year						
Specialty/Subspecialty Name	**Total**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Hand Surgery (multidisciplinary)	163	163						
Musculoskeletal Oncology	16	16						
Orthopaedic Sports Medicine	216	216						
Orthopaedic Surgery of the Spine	26	26						
Orthopaedic Trauma	19	19						
Pediatric Orthopaedic Surgery	35	35						
Osteopathic Neuromusculoskeletal Medicine	84	17	23	44				
Otolaryngology – Head and Neck Surgery	1,840	386	379	358	367	350		
Otolaryngology – Head and Neck Surgery (Osteopathic Recognition)	25	5	5	5	5	5		
Neurotology	39	23	16					
Pediatric Otolaryngology	44	44						
Pathology (Anatomic and Clinical)	2,365	638	645	589	493			
Blood Banking/Transfusion Medicine	47	47						
Clinical Informatics (multidisciplinary)	23	14	9					
Chemical Pathology	2	2						
Cytopathology	107	107						
Forensic Pathology	62	62						
Hematopathology	126	126						
Medical Microbiology	9	9						
Neuropathology	60	31	29					
Pediatric Pathology	17	17						
Selective Pathology (Focused Anatomic)	105	105						
Selective Pathology (Focused Clinical)	2	2						
Selective Pathology (Surgical)	88	88						
Pediatrics	9,709	3,386	3,269	3,054				
Adolescent Medicine	98	41	36	21				
Child Abuse Pediatrics	59	19	24	16				
Clinical Informatics (multidisciplinary)	31	16	15					
Developmental-Behavioral Pediatrics	111	40	35	36				
Neonatal-Perinatal Medicine	859	299	283	277				
Pediatric Cardiology	496	179	161	156				
Pediatric Critical Care Medicine	627	236	203	188				
Pediatric Emergency Medicine (multidisciplinary)	471	169	163	139				
Pediatric Endocrinology	235	87	78	70				
Pediatric Gastroenterology	342	122	114	106				
Pediatric Hematology/Oncology	483	171	157	155				
Pediatric Hospital Medicine	211	117	94					
Pediatric Infectious Diseases	187	64	65	58				
Pediatric Nephrology	151	54	41	56				
Pediatric Pulmonology	198	68	72	58				
Pediatric Rheumatology	103	32	36	35				
Pediatric Transplant Hepatology	13	13						

Table 3 – Number of Residents/Fellows by Year in Program

		Resident/Fellow Year						
Specialty/Subspecialty Name	**Total**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Sports Medicine (multidisciplinary)	27	27						
Physical Medicine and Rehabilitation	1,741	203	538	505	495			
Brain Injury Medicine (multidisciplinary)	22	22						
Neuromuscular Medicine (multidisciplinary)	1	1						
Pediatric Rehabilitation Medicine	39	14	25					
Spinal Cord Injury Medicine	27	27						
Sports Medicine (multidisciplinary)	42	42						
Plastic Surgery - Independent	198	63	68	67				
Plastic Surgery - Integrated	1,164	203	204	203	194	180	180	
Craniofacial Surgery	7	7						
Hand Surgery (multidisciplinary)	30	30						
Preventive Medicine (Aerospace Medicine)	47	20	27					
Preventive Medicine (Occupational Medicine)	115	55	60					
Preventive Medicine (Public Health and General Preventive Medicine)	166	86	80					
Undersea and Hyperbaric Medicine	2	2						
Psychiatry	8,121	2,299	2,213	2,081	1,528			
Addiction Medicine (multidisciplinary)	203	203						
Addiction Psychiatry	92	92						
Child and Adolescent Psychiatry	1,012	531	481					
Consultation-Liaison Psychiatry	94	94						
Forensic Psychiatry	89	89						
Geriatric Psychiatry	55	55						
Radiation Oncology	748	176	190	185	197			
Diagnostic Radiology	4,494	1,149	1,120	1,112	1,113			
Abdominal Radiology	54	54						
Musculoskeletal Radiology	42	42						
Neuroendovascular Intervention (multidisciplinary)	8	5	3					
Neuroradiology	322	322						
Nuclear Radiology	12	12						
Pediatric Radiology	60	60						
Interventional Radiology - Independent	153	122	31					
Interventional Radiology - Integrated	737	164	155	145	144	129		
Surgery	9,794	2,966	1,933	1,731	1,614	1,550		
Surgery (Osteopathic Recognition)	84	17	17	15	19	16		
Complex General Surgical Oncology	132	66	66					
Hand Surgery (multidisciplinary)	9	9						
Pediatric Surgery	88	47	41					
Surgical Critical Care	354	354						
Vascular Surgery - Independent	279	145	134					
Vascular Surgery - Integrated	409	95	89	84	81	60		
Thoracic Surgery - Independent (Two-Year Programs)	146	74	72					

Table 3 – Number of Residents/Fellows by Year in Program

		Resident/Fellow Year						
Specialty/Subspecialty Name	**Total**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Thoracic Surgery - Independent (Three-Year Programs)	107	35	39	33				
Congenital Cardiac Surgery	9	8	1					
Thoracic Surgery - Integrated	253	49	49	46	44	33	32	
Urology	1,885	402	399	370	354	360		
Female Pelvic Medicine and Reconstructive Surgery (multidisciplinary)	38	16	16	6				
Pediatric Urology	33	21	12					
Transitional Year	2039	2039						
Transitional Year (Osteopathic Recognition)	20	20						
Internal Medicine-Pediatrics	1,556	395	383	393	385			

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Table 4 – Rate of Straight-Lining (June 2023)

Specialty/Subspecialty Name	Number of Subcomp	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Allergy and Immunology (330)	19	7.2%	18.3%					
Anesthesiology (7,497)	23	28.3%	23.7%	24.8%	36.3%			
Adult Cardiothoracic Anesthesiology (262)	23	30.9%						
Critical Care Medicine (multidisciplinary) (204)	19	21.1%						
Obstetric Anesthesiology (54)	20	20.4%						
Pain Medicine (multidisciplinary) (422)	21	25.8%						
Pediatric Anesthesiology (167)	20	18.6%						
Pediatric Cardiac Anesthesiology (14)	21	0.0%						
Regional Anesthesiology and Acute Pain Medicine (87)	17	39.1%						
Colon and Rectal Surgery (112)	27	13.4%						
Dermatology (1,639)	21	12.9%	12.2%	22.4%	0.0%			
Dermatopathology (multidisciplinary) (68)	19	17.6%						
Micrographic Surgery and Dermatologic Oncology (95)	18	15.8%						
Pediatric Dermatology (25)	21	20.0%						
Emergency Medicine (Three-Year Programs) (7,023)	22	11.5%	13.8%	22.2%				
Emergency Medicine (Four-Year Programs) (2,577)	22	17.3%	14.0%	15.2%	19.0%			
Emergency Medical Services (110)	19	8.2%						
Medical Toxicology (multidisciplinary) (105)	22	3.6%	6.0%					
Pediatric Emergency Medicine (multidisciplinary) (151)	24	5.0%	0.0%	9.5%				
Sports Medicine (multidisciplinary) (16)	20	0.0%						
Undersea and Hyperbaric Medicine (multidisciplinary) (13)	22	0.0%						
Family Medicine (15,022)	19	7.8%	7.5%	11.0%				
Clinical Informatics (multidisciplinary) (23)	21	0.0%	0.0%					
Geriatric Medicine (multidisciplinary) (45)	22	4.4%						
Hospice and Palliative Medicine (multidisciplinary) (491)	20	10.4%						
Sports Medicine (multidisciplinary) (303)	20	7.5%						
Internal Medicine (32,898)	21	15.4%	14.7%	23.5%				
Adult Congenital Heart Disease (30)	19	15.0%	20.0%					
Advanced Heart Failure and Transplant Cardiology (86)	21	34.9%						
Cardiovascular Disease (3,598)	17	15.9%	20.5%	34.7%				
Clinical Cardiac Electrophysiology (342)	24	16.4%	30.8%					
Clinical Informatics (multidisciplinary) (74)	21	0.0%	3.7%					
Critical Care Medicine (376)	19	10.0%	16.8%					
Endocrinology, Diabetes, and Metabolism (745)	19	4.4%	9.2%					
Gastroenterology (2,039)	17	14.1%	18.2%	30.1%				
Gastroenterology (Dual Gastroenterology/Transplant Hepatology Pathway) (54)	22		0.0%	15.8%				
Geriatric Medicine (multidisciplinary) (264)	22	8.3%						
Hematology and Medical Oncology (2,197)	22	12.4%	12.8%	25.1%				
Infectious Disease (841)	23	6.5%	14.8%					

Table 4 – Rate of Straight-Lining (June 2023)

Specialty/Subspecialty Name	Number of Subcomp	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Interventional Cardiology (377)	17	32.9%						
Medical Oncology (5)	21	0.0%	0.0%					
Nephrology (904)	22	8.8%	20.5%					
Pulmonary Disease (58)	19	6.3%	7.7%					
Pulmonary Disease and Critical Care Medicine (2,362)	20	14.8%	14.6%	26.2%				
Rheumatology (579)	21	7.9%	15.2%					
Sleep Medicine (multidisciplinary) (229)	18	20.5%						
Transplant Hepatology (49)	16	24.5%						
Medical Genetics and Genomics (62)	17	0.0%	25.0%					
Clinical Biochemical Genetics (10)	19	0.0%	0.0%					
Laboratory Genetics and Genomics (80)	19	0.0%	0.0%					
Medical Biochemical Genetics (14)	16	14.3%						
Molecular Genetic Pathology (multidisciplinary) (58)	22	15.5%						
Neurological Surgery (1,615)	20	11.9%	9.6%	9.2%	9.5%	10.1%	12.9%	20.4%
Neuroendovascular Intervention (multidisciplinary) (3)	20	66.7%						
Neurology (3,708)	27	11.6%	4.9%	8.0%	16.0%			
Clinical Neurophysiology (147)	28	5.4%						
Epilepsy (155)	24	13.5%						
Neurocritical Care (multidisciplinary) (171)	24	1.2%	20.7%					
Neuroendovascular Intervention (multidisciplinary) (5)	20	0.0%	0.0%					
Neurodevelopmental Disabilities (33)	32	10.0%	0.0%	0.0%	11.1%			
Neuromuscular Medicine (multidisciplinary) (96)	27	7.3%						
Vascular Neurology (205)	25	12.2%						
Child Neurology (493)	26	3.2%	2.4%	10.2%				
Nuclear Medicine (85)	22	19.1%	5.9%	33.3%				
Obstetrics and Gynecology (6,059)	32	6.4%	7.4%	6.9%	15.0%			
Complex Family Planning (58)	25	0.0%	3.4%					
Gynecologic Oncology (248)	27	1.1%	3.7%	13.0%				
Maternal-Fetal Medicine (434)	26	2.6%	4.8%	6.6%				
Reproductive Endocrinology and Infertility (173)	22	1.7%	3.6%	8.5%				
Urogynecology and Reconstructive Pelvic Surgery (multidisciplinary) (168)	28	0.0%	0.0%	7.8%				
Ophthalmology (1,769)	20	14.8%	8.8%	10.7%	22.5%			
Ophthalmic Plastic and Reconstructive Surgery (5)	17	0.0%	0.0%					
Orthopaedic Surgery (4,544)	20	22.1%	20.7%	24.1%	28.1%	34.0%		
Adult Reconstructive Orthopaedic Surgery (53)	18	52.8%						
Foot and Ankle Orthopaedic Surgery (18)	21	61.1%						
Hand Surgery (multidisciplinary) (163)	20	31.3%						
Musculoskeletal Oncology (16)	18	25.0%						
Orthopaedic Sports Medicine (209)	18	30.6%						
Orthopaedic Surgery of the Spine (26)	19	42.3%						
Orthopaedic Trauma (19)	21	36.8%						

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Table 4 – Rate of Straight-Lining (June 2023)

Specialty/Subspecialty Name	Number of Subcomp	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Pediatric Orthopaedic Surgery (35)	23	8.6%						
Osteopathic Neuromusculoskeletal Medicine (84)	18	0.0%	0.0%	2.3%				
Otolaryngology – Head and Neck Surgery (1,840)	23	11.9%	6.3%	5.0%	8.2%	11.4%		
Neurotology (39)	19	13.0%	12.5%					
Pediatric Otolaryngology (44)	19	15.9%						
Pathology (Anatomic and Clinical) (2,365)	21	11.8%	10.7%	10.0%	22.9%			
Blood Banking/Transfusion Medicine (47)	23	14.9%						
Clinical Informatics (multidisciplinary) (27)	21	0.0%	0.0%					
Chemical pathology (2)	19	0.0%						
Cytopathology (107)	21	15.9%						
Forensic Pathology (62)	19	6.5%						
Hematopathology (126)	23	13.5%						
Medical Microbiology (9)	21	22.2%						
Neuropathology (60)	20	0.0%	3.4%					
Pediatric Pathology (17)	19	23.5%						
Selective Pathology (Focused Anatomic) (105)	19	12.4%						
Selective Pathology (Surgical) (88)	19	21.6%						
Pediatrics (9,709)	22	4.1%	4.3%	8.4%				
Adolescent Medicine (98)	25	0.0%	0.0%	4.8%				
Child Abuse Pediatrics (59)	28	0.0%	8.3%	12.5%				
Clinical Informatics (multidisciplinary) (31)	21	0.0%	0.0%					
Developmental-Behavioral Pediatrics (111)	24	0.0%	0.0%	0.0%				
Neonatal-Perinatal Medicine (859)	26	4.0%	4.6%	10.1%				
Pediatric Cardiology (496)	23	3.4%	6.8%	10.9%				
Pediatric Critical Care Medicine (627)	23	0.8%	3.9%	8.5%				
Pediatric Emergency Medicine (multidisciplinary) (471)	24	0.6%	5.5%	5.8%				
Pediatric Endocrinology (235)	24	3.4%	15.4%	7.1%				
Pediatric Gastroenterology (342)	24	4.1%	6.1%	10.4%				
Pediatric Hematology/Oncology (483)	25	7.0%	9.6%	10.3%				
Pediatric Hospital Medicine (211)	21	0.0%	0.0%					
Pediatric Infectious Diseases (187)	26	0.0%	0.0%	1.7%				
Pediatric Nephrology (151)	26	1.9%	4.9%	7.1%				
Pediatric Pulmonology (198)	21	0.0%	4.2%	10.3%				
Pediatric Rheumatology (103)	25	3.1%	0.0%	2.9%				
Sports Medicine (multidisciplinary) (27)	20	3.7%						
Pediatric Transplant Hepatology (13)	24	0.0%						
Physical Medicine and Rehabilitation (1,741)	24	9.4%	7.4%	8.3%	21.8%			
Brain Injury Medicine (multidisciplinary) (22)	23	4.5%						
Neuromuscular Medicine (multidisciplinary) (1)	27	0.0%						
Pediatric Rehabilitation Medicine (39)	24	0.0%	12.0%					
Spinal Cord Injury Medicine (27)	23	3.7%						
Sports Medicine (multidisciplinary) (42)	20	21.4%						
Plastic Surgery - Independent (198)	22	6.3%	11.8%	16.4%				

Table 4 – Rate of Straight-Lining (June 2023)

Specialty/Subspecialty Name	Number of Subcomp	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Plastic Surgery - Integrated (1,164)	22	19.2%	15.7%	16.3%	16.5%	23.9%	22.8%	
Craniofacial Surgery (7)	18	42.9%						
Hand Surgery (multidisciplinary) (27)	20	11.1%						
Preventive Medicine (Aerospace Medicine) (47)	20	5.0%	22.2%					
Preventive Medicine (Occupational Medicine) (115)	21	0.0%	1.7%					
Preventive Medicine (Public Health and General Preventive Medicine) (166)	20	0.0%	0.0%					
Undersea and Hyperbaric Medicine (multidisciplinary) (2)	22	50.0%						
Psychiatry (8,121)	21	13.1%	11.1%	12.6%	17.9%			
Addiction Medicine (multidisciplinary) (202)	16	5.9%						
Addiction Psychiatry (92)	17	16.3%						
Child and Adolescent Psychiatry (1,011)	23	4.3%	9.8%					
Consultation-Liaison Psychiatry (94)	16	14.9%						
Forensic Psychiatry (89)	17	3.4%						
Geriatric Psychiatry (55)	20	12.7%						
Radiation Oncology (748)	21	18.8%	19.5%	24.9%	42.6%			
Diagnostic Radiology (4,494)	24	36.0%	33.7%	32.5%	43.8%			
Abdominal Radiology (54)	20	18.5%						
Musculoskeletal Radiology (42)	22	16.7%						
Neuroendovascular Intervention (multidisciplinary) (8)	20	20.0%	33.3%					
Neuroradiology (322)	21	28.3%						
Nuclear Radiology (12)	20	16.7%						
Pediatric Radiology (60)	20	20.0%						
Interventional Radiology - Independent (153)	24	25.8%	19.6%					
Interventional Radiology - Integrated (737)	31	37.4%	30.4%	35.1%	32.6%	34.8%		
Surgery (9,794)	18	26.9%	18.3%	17.0%	18.3%	33.1%		
Complex General Surgical Oncology (132)	23	15.0%	18.9%					
Hand Surgery (Surgery) (9)	20	0.0%						
Pediatric Surgery (88)	25	10.6%	19.5%					
Surgical Critical Care (354)	25	21.5%						
Vascular Surgery - Independent (279)	28	13.8%	19.4%					
Vascular Surgery - Integrated (409)	28	14.7%	12.4%	16.7%	19.8%	41.7%		
Thoracic Surgery- Independent (Two-Year Programs) (146)	23	1.4%	16.7%					
Thoracic Surgery - Independent (Three-Year Programs) (107)	23	0.0%	12.8%	18.2%				
Congenital Cardiac Surgery (9)	17	12.5%	0.0%					
Thoracic Surgery - Integrated (253)	24	20.4%	12.2%	10.9%	18.2%	24.2%	31.3%	
Urology (1,833)	20	17.2%	11.0%	14.1%	11.3%	22.8%		
Urogynecology and Reconstructive Pelvic Surgery (multidisciplinary) (38)	28	0.0%	6.3%	0.0%				
Pediatric Urology (33)	21	23.8%	25.0%					
Transitional Year (2,038)	19	19.4%						

Note: The following specialties and subspecialties do not contain data and are not included within the data report due to being a newly designated program or containing an insufficient number of learners.

Overall

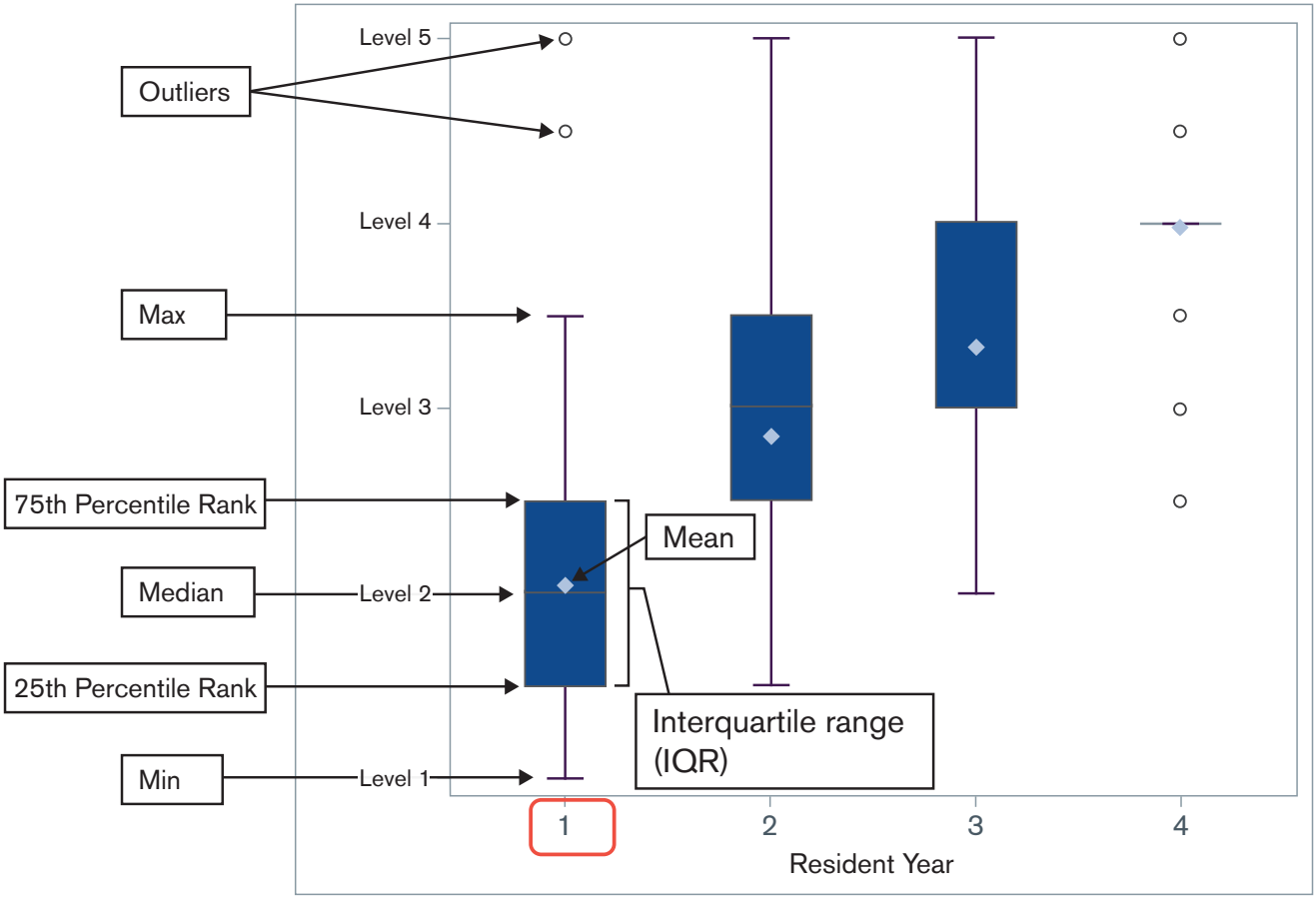
- Chemical Pathology (Pathology)
- Clinical Biochemical Genetics (Medical Genetics and Genomics)
- Congenital Cardiac Surgery (Thoracic Surgery)
- Craniofacial Surgery (Plastic Surgery)
- Hand Surgery (Surgery)
- Medical Microbiology (Pathology)
- Medical Oncology (Internal Medicine)
- Neuroendovascular Intervention (Neurological Surgery)
- Neuroendovascular Intervention (Neurology)
- Neuroendovascular Intervention (Radiology)
- Neuromuscular Medicine (Physical Medicine and Rehabilitation)
- Ophthalmic Plastic and Reconstructive Surgery (Ophthalmology)
- Selective Pathology (Pathology)
- Undersea and Hyperbaric Medicine (Preventive Medicine)

Osteopathic Recognition

- Allergy and Immunology
- Cardiovascular Disease (Internal Medicine)
- Emergency Medicine
- Hospice and Palliative Medicine (Internal Medicine)
- Internal Medicine-Pediatrics
- Neurological Surgery
- Neurology
- Pediatrics
- Physical Medicine and Rehabilitation
- Plastic Surgery
- Psychiatry
- Pulmonary Disease and Critical Care Medicine (Internal Medicine)
- Sports Medicine (Pediatrics)
- Urology

FIGURE 1: KEY TO BOX PLOTS

Box plots provide a rigorous and robust way to display complex data, such as for the Milestones. The components of the box plots used for the Milestones are shown below.



As seen in this diagram, the median Milestones level for each resident year is represented by the horizontal line, bounded by the 25th and 75th percentile of Milestone ratings, also known as the interquartile range (IQR). The mean rating is represented by the diamond but should be interpreted with caution given that the Milestones are ordinal, not interval data. "Min" represents the lowest level and "Max" the highest level (the "whiskers"), excluding outliers (represented by the open circles). As would be expected, there is a general upward trajectory in this example subcompetency from Year 1 (median Level 2) to Year 4 (median Level 4).

Most Milestone sets include five levels of development with transition zones between each level (designated as half increments, such as Level 2.5). In this example, the box plot for Resident Year 1 (highlighted by the red box) shows that the median is Level 2, and the IQR extends from Level 1.5 (25th percentile) to Level 2.5 (75th percentile).

With regard to Milestone levels within an individual residency or fellowship year (i.e., post-graduate year (PGY)), the levels can be sorted from least to greatest, and then graphed as shown in this box plot. In the example above, the highest 50 percent of the Resident Year 1 group were at or above Milestone Level 2; they are represented by everything above the median line. Fifty percent of the Year 1 residents fall between Level 1.5 and Level 2.5 (IQR). Those in the top 25 percent of Milestone judgments in the Year 1 group are shown by the top "whisker" (here labeled as "Max") and the outlier open circles.

The outliers represent those who were judged to be substantially higher than normal (in this case we see two outlier circles) or much lower than normal (in this example there are no low outliers). The number of people represented by the circles will vary by the sample size of that specialty/subspecialty.

Box plots provide information on more than just the four split groups. They also show which way the Milestone data can "sway." For example, if the majority of residents/fellows are judged much higher as comparted to just a few residents/fellows being judged much lower, the median will be higher, or the top whisker might be longer than the bottom one. Box plots provide a better overview of the data's distribution nationally than simple means and standard deviations.

The box plots must be interpreted in the context of the Milestones descriptions for each subcompetency within each discipline. Provided below are links to each specialty's Milestones Sets to help guide review of the data.

Specialty:

Allergy and Immunology

Anesthesiology

Colon and Rectal Surgery

Dermatology

Emergency Medicine

Family Medicine

Internal Medicine

Medical Genetics and Genomics

Neurological Surgery

Neurology

Nuclear Medicine

Obstetrics and Gynecology

Ophthalmology

Orthopaedic Surgery

Osteopathic Neuromusculoskeletal Medicine

Otolaryngology – Head and Neck Surgery

Pathology

Pediatrics

Physical Medicine and Rehabilitation

Plastic Surgery

Preventive Medicine

Psychiatry

Radiation Oncology

Radiology

Surgery

Thoracic Surgery

Transitional Year

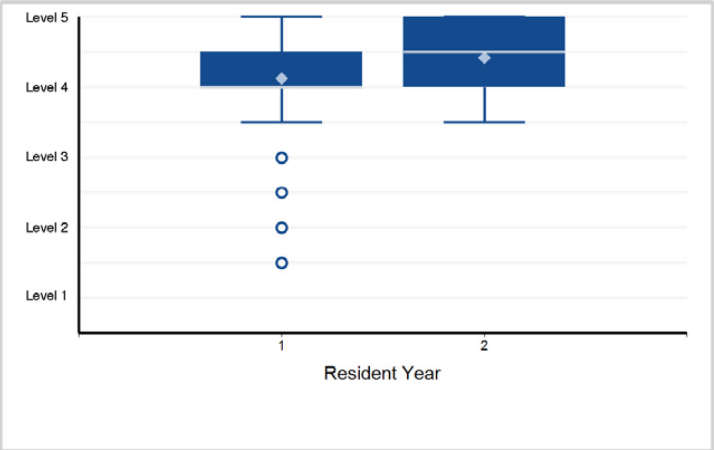
Urology

Specialty Box Plot Report - Milestone Evaluation by Resident/Fellow Year: Year-End 2023-2024

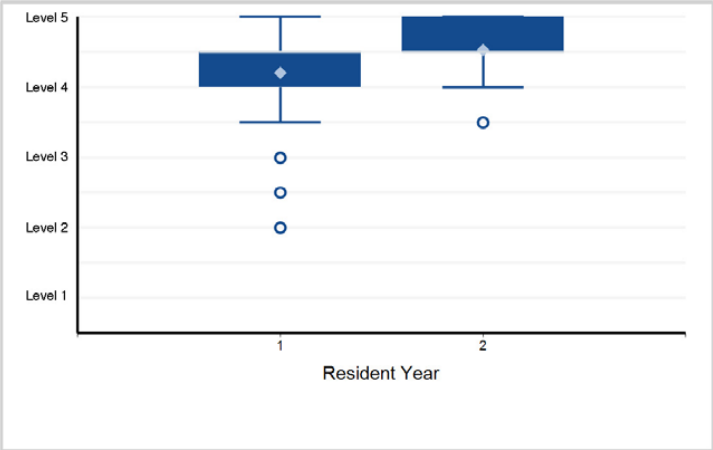
TABLE 138: SPECIALTY: Interventional Radiology - Independent

Resident Year	1	2	Total Residents
# of Residents	122	31	153

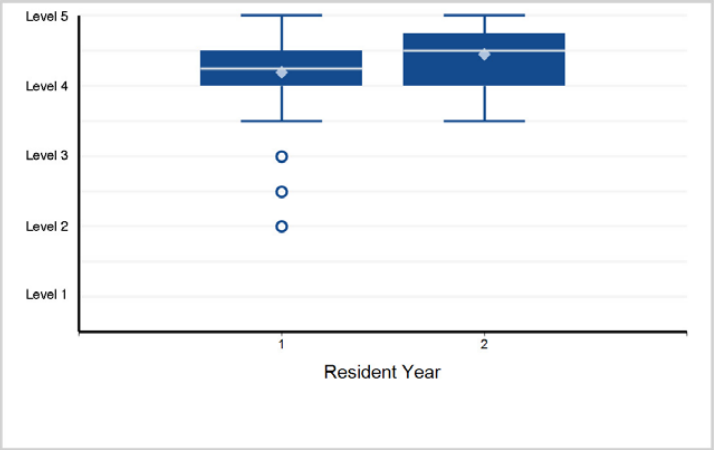
1. Patient Care - Patient Care 1: Reporting



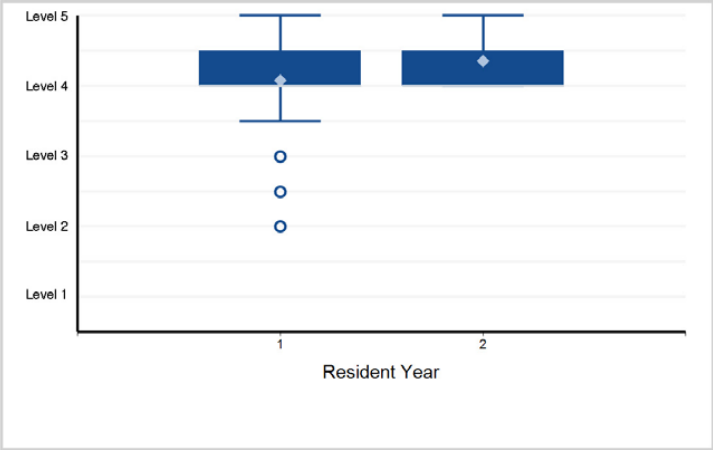
2. Patient Care - Patient Care 2: Imaging Consultation



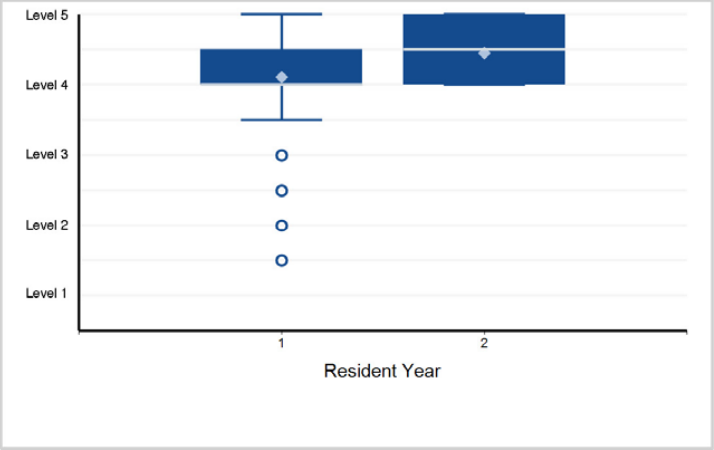
3. Patient Care - Patient Care 3: Pre-Procedural Consultation



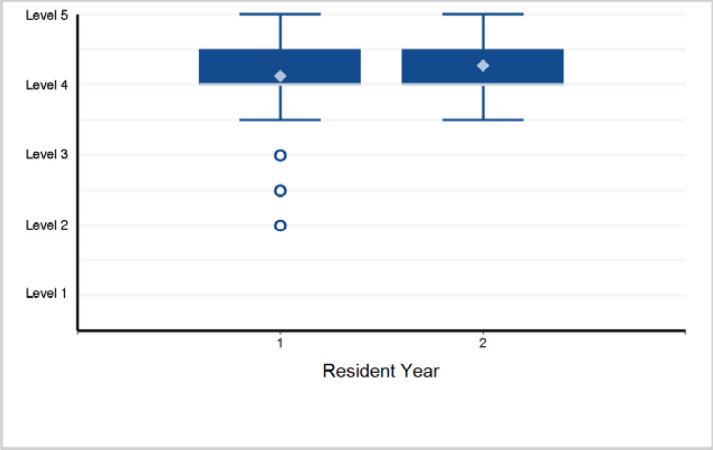
4. Patient Care - Patient Care 4: Performance of Procedures



5. Patient Care - Patient Care 5: Post-Procedural Patient Care



6. Medical Knowledge - Medical Knowledge 1: Pathophysiology and Treatment



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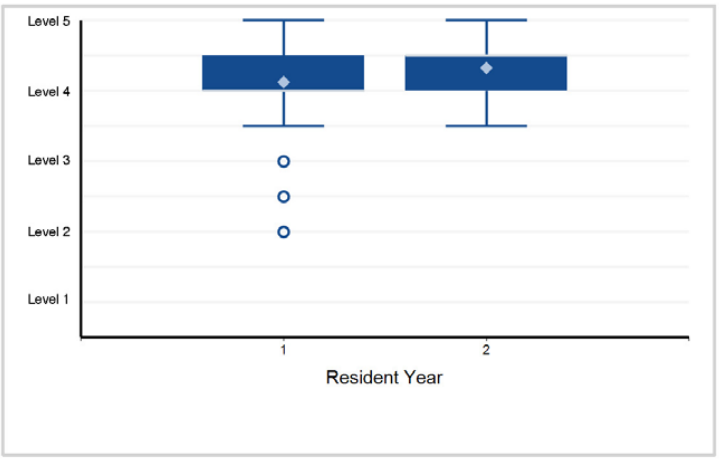
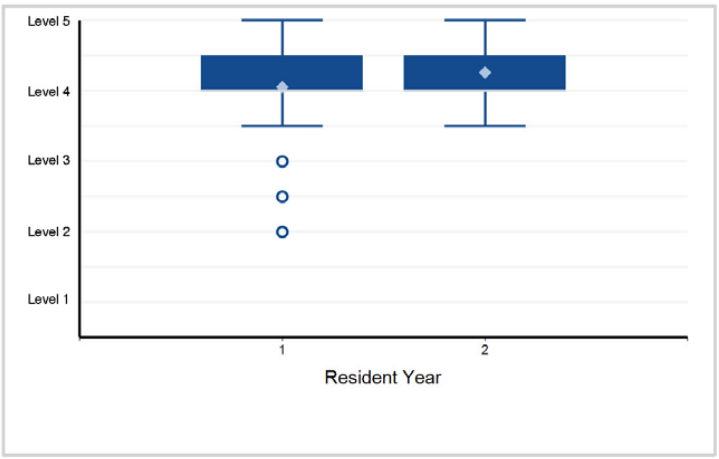
SPECIALTY: **Interventional Radiology - Independent**

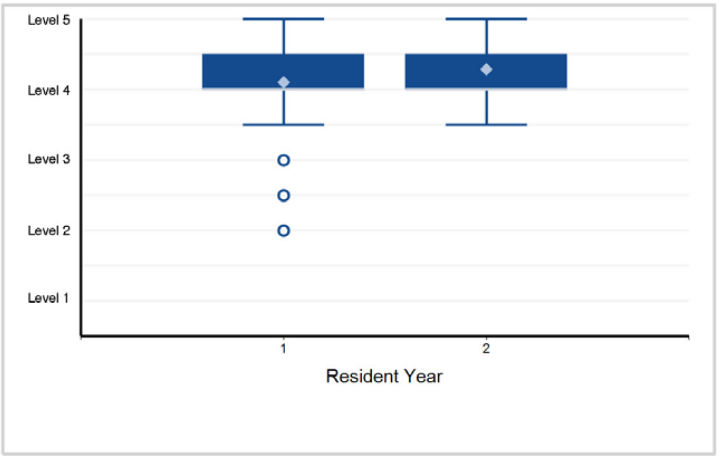
7. Medical Knowledge - Medical Knowledge 2: Procedural Anatomy



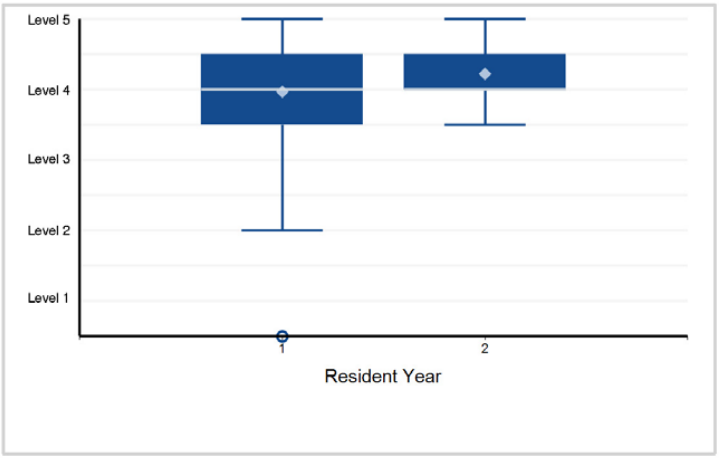
8. Medical Knowledge - Medical Knowledge 3: Pharmacology



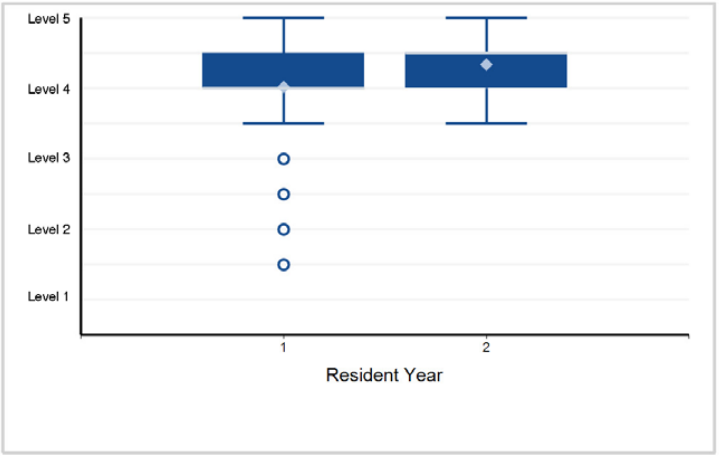
9. Systems-Based Practice - Systems-Based Practice 1: Patient Safety



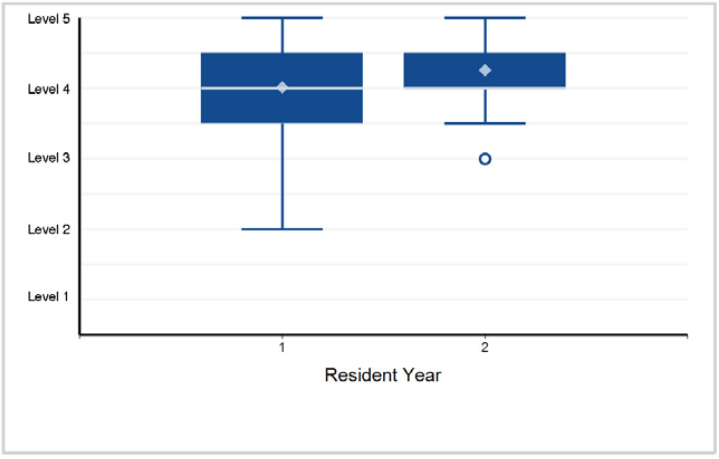
10. Systems-Based Practice - Systems-Based Practice 2: Quality Improvement



11. Systems-Based Practice - Systems-Based Practice 3: System Navigation for Patient-Centered Care



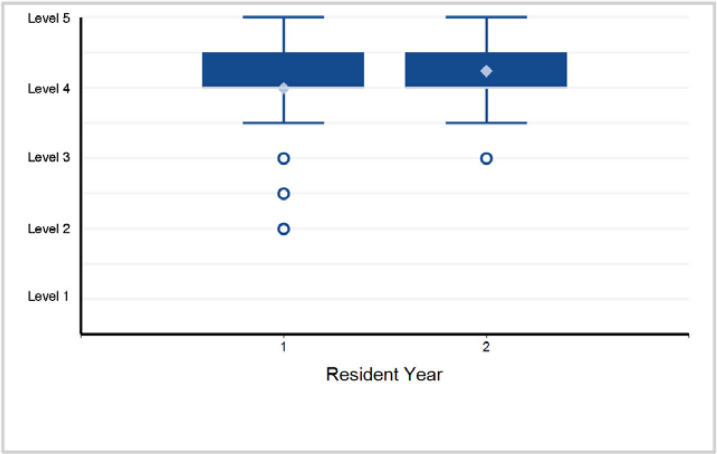
12. Systems-Based Practice - Systems-Based Practice 4: Multidisciplinary Conferences



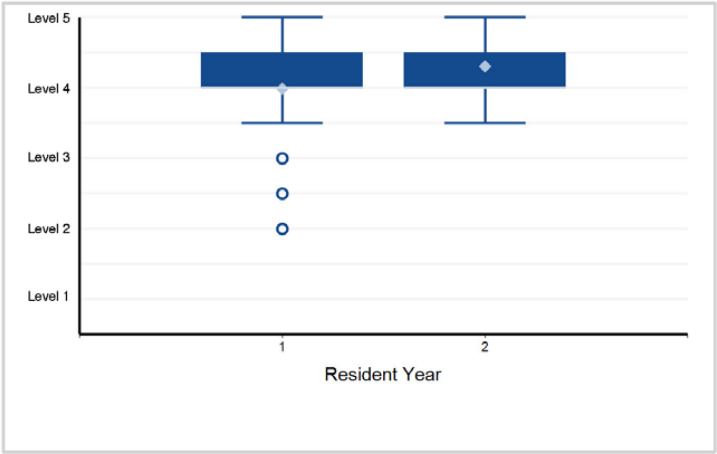
Specialty Box Plot Report - Milestone Evaluation by Resident/Fellow Year: Year-End 2023-2024

SPECIALTY: **Interventional Radiology - Independent**

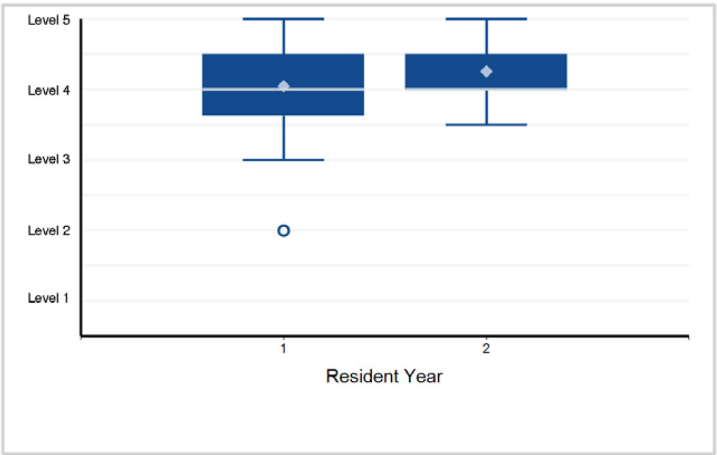
13. Systems-Based Practice - Systems-Based Practice 5: Population Health



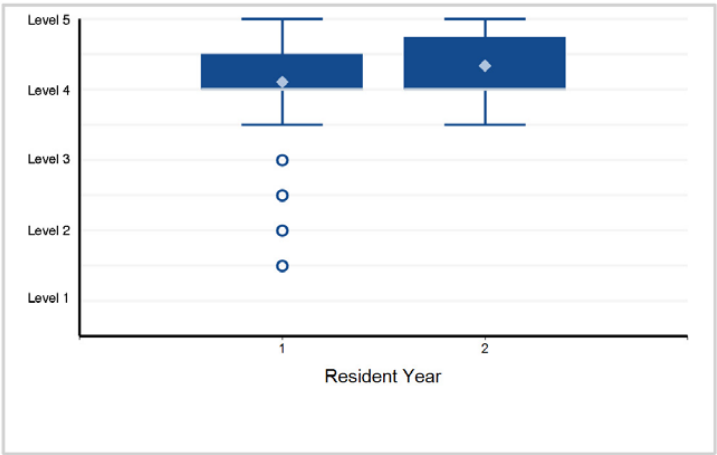
14. Systems-Based Practice - Systems-Based Practice 6: Physician Role in Health Care Systems



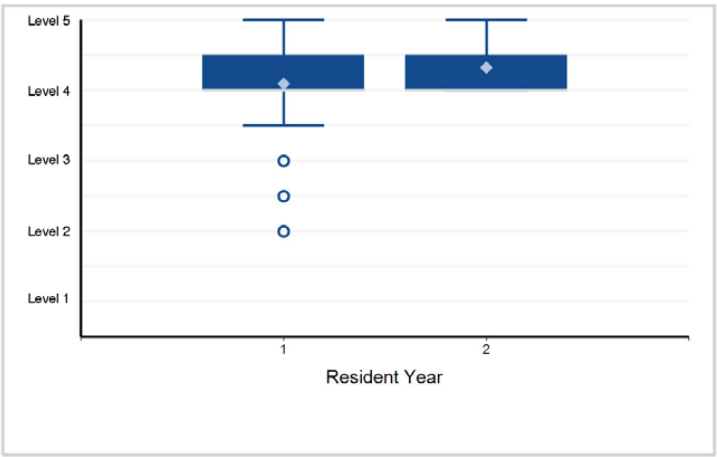
15. Systems-Based Practice - Systems-Based Practice 7: Radiation Safety



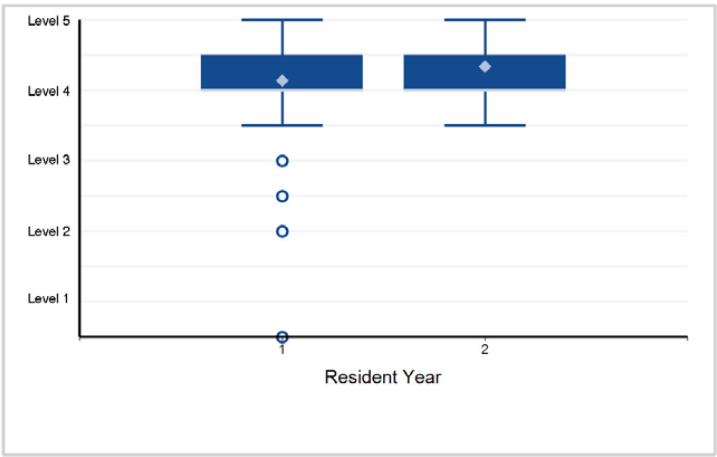
16. Practice-Based Learning and Improvement - Practice-Based Learning and Improvement 1: Evidence-Based and Informed Practice



17. Practice-Based Learning and Improvement - Practice-Based Learning and Improvement 2: Reflective Practice and Commitment ...



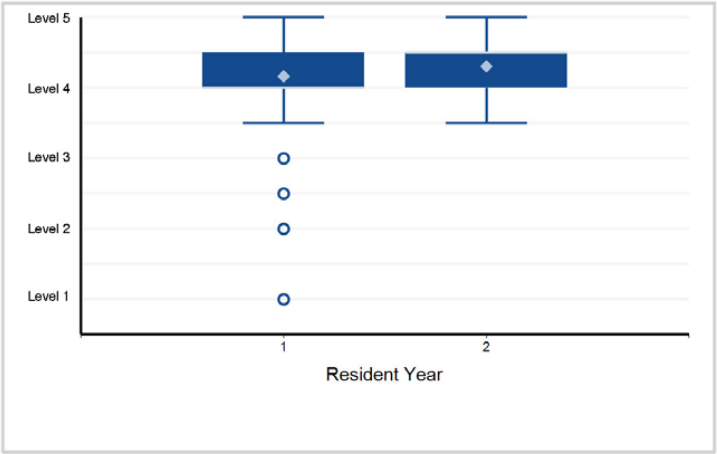
18. Professionalism - Professionalism 1: Professional Behavior



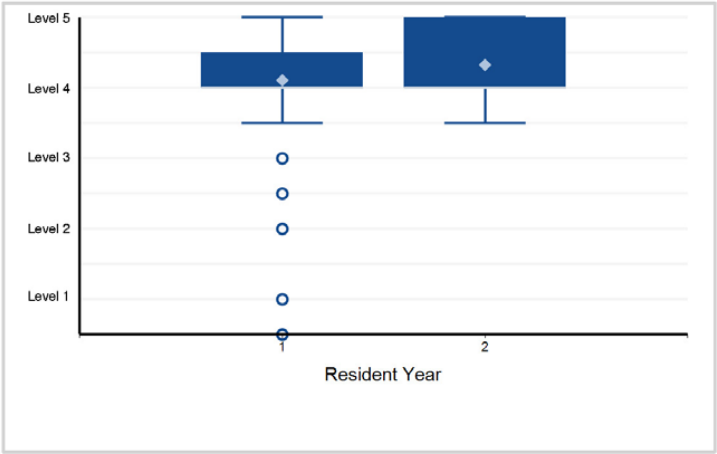
Specialty Box Plot Report - Milestone Evaluation by Resident/Fellow Year: Year-End 2023-2024

SPECIALTY: **Interventional Radiology - Independent**

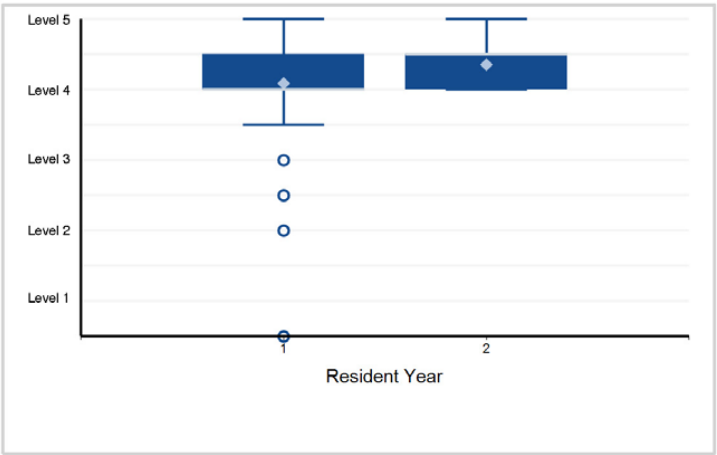
19. Professionalism - Professionalism 2: Ethical Principles



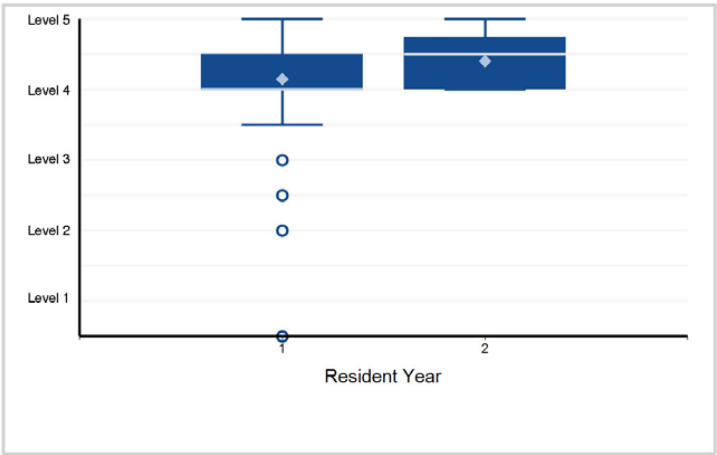
20. Professionalism - Professionalism 3: Accountability/Conscientiousness



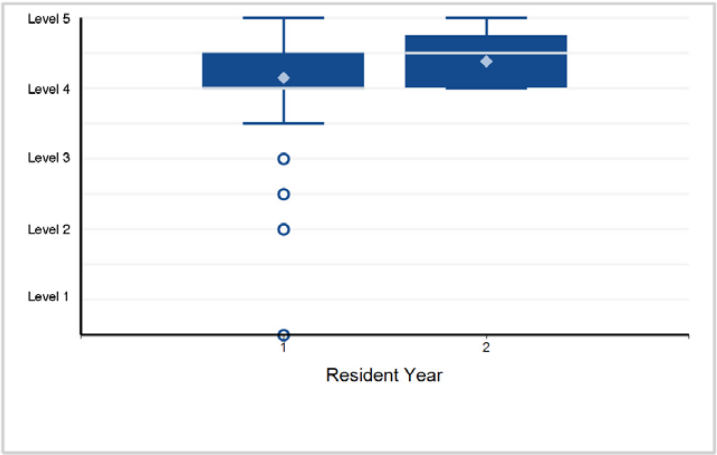
21. Professionalism - Professionalism 4: Self-Awareness and Help-Seeking



22. Interpersonal and Communication Skills - Interpersonal and Communication Skills 1: Patient- and Family-Centered Communication



23. Interpersonal and Communication Skills - Interpersonal and Communication Skills 2: Interprofessional and Team Communication



24. Interpersonal and Communication Skills - Interpersonal and Communication Skills 3: Communication within Health Care Systems