



Saudi Board of Internal Medicine Exam Results Report 2024

الهيئة السعودية للتخصصات الصحية
Saudi Commission for Health Specialties

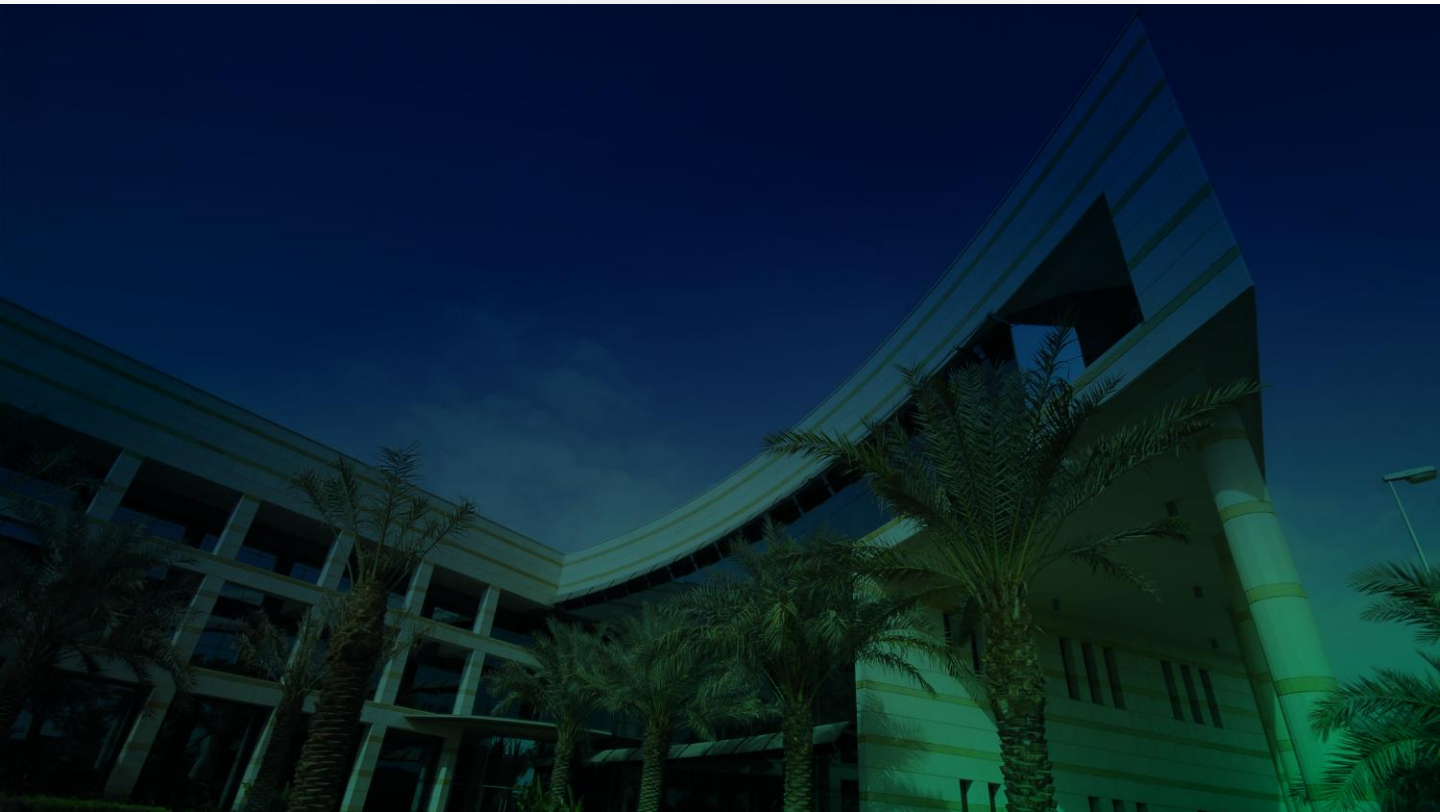


About Saudi Commission for Health Specialties

The **Saudi Commission for Health Specialties (SCFHS)** is an independent professional and scientific body responsible for advancing health professions and developing competencies by enabling healthcare practitioners to achieve global competitiveness. It operates through a regulatory model that establishes safe and flexible standards designed to address healthcare needs and demands, thereby improving the quality of practice, fostering sustainable impact, and reinforcing Saudi Arabia's position internationally.

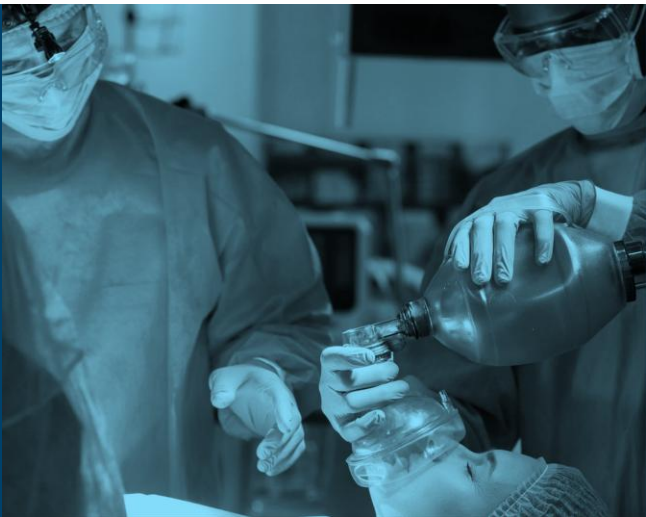
In accordance with its mandate, the **Saudi Commission for Health Specialties (SCFHS)** grants the Saudi Board Certification as the highest professional credential in both main and subspecialties. This certification is a national recognition of a health professional's competence and readiness for independent practice in their specialty, awarded upon passing Written and Clinical board exams that assess knowledge and clinical judgment that ensure the highest standards of patient care, professionalism, and medical knowledge.

This report presents the results of trainees in the Saudi Board Exams with the aim of enhancing transparency in presenting exam outcomes and providing decision-makers with insights that support the improvement of educational and training program.



About This Report

This report presents the results of the 2024 Saudi Board of Internal Medicine Exams, including both the Written and Clinical exams, and describes the methodology applied to rank training centers. It emphasizes the performance of centers based on their trainees' exam outcomes, organizing them to facilitate comparison.



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01

Methodological Framework for Ranking Saudi Training Centers

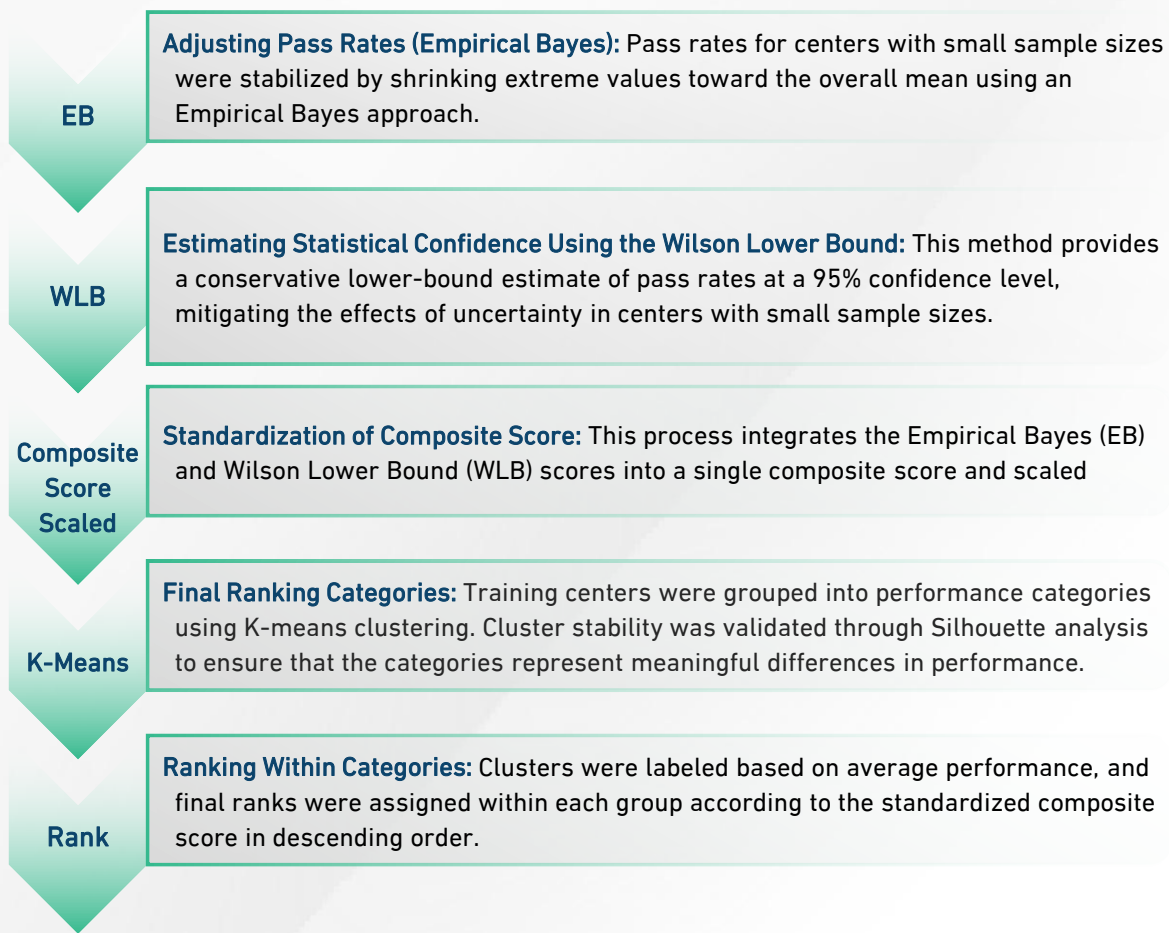
This section outlines the methodology used to rank Saudi training centers based on trainees' performance in the Written and Clinical exams, aiming to ensure fairness, transparency, and comparability across centers.

Methodological Framework for Ranking Training Centers

Methodology of the Internal Medicine Centers Performance Analysis

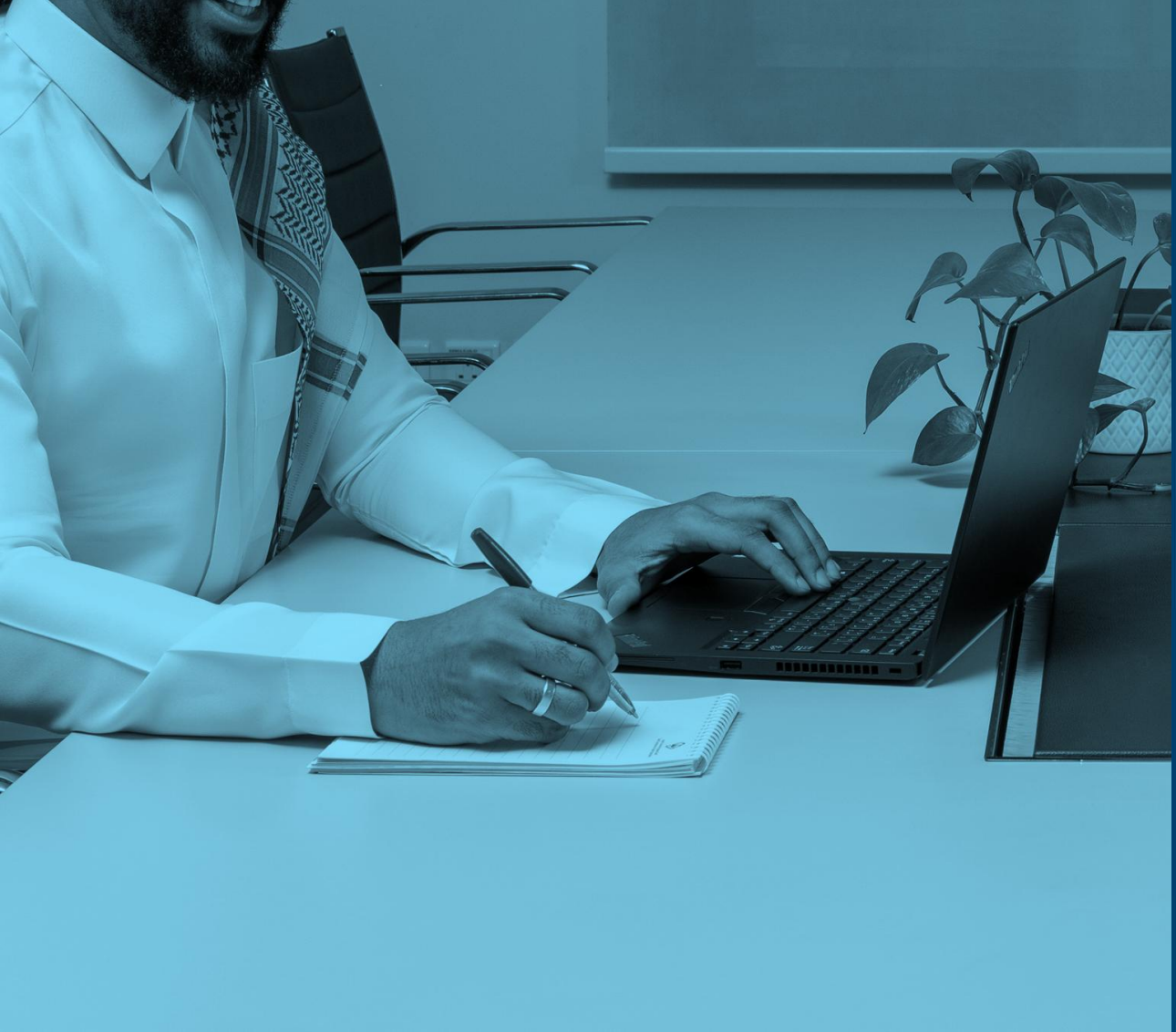
This methodology aims to establish a transparent and reliable ranking system for training centers, based on trainees’ performance in the 2024 Written and Clinical exams. The analysis includes all exam attempts, including repeat sittings, to ensure comprehensive coverage of results. The scope of this report is limited to Saudi Board programs conducted within training centers in the Kingdom of Saudi Arabia and excludes programs delivered in other Gulf Cooperation Council (GCC) countries.

To ensure fairness across centers of varying sizes, advanced statistical techniques were applied to guarantee comparability between both large and small centers. The following section outlines the methodological steps undertaken; further technical details are provided in the Appendices.



Disclaimer:

- Sample Size Effect:** The methodology revealed significant performance differences across training centers; however, results for some centers may be influenced by very small sample sizes, such as cases involving only a one trainee.
- Scope Limitation:** The results reflect exam outcomes only and do not constitute a comprehensive assessment of overall training quality.
- Intended Use:** The findings are intended to support continuous improvement and should not be interpreted as definitive judgments on the performance of training centers.



02

Ranking of Training Centers Based on Written Exam Results

This section ranks Saudi training centers based on trainees' performance in the 2024 Written exam and organizes them into performance categories.

Ranking of Training Centers Based on Written Exam

Training Center	N	Pass Rate	Composite Score Scale	Category
King Faisal Specialist Hospital and Research Center in Riyadh	22	100%	1.88	Excellent
King Faisal Specialist Hospital and Research Center in Jeddah	17	100%	1.77	Excellent
Qassim Health Cluster	17	100%	1.77	Excellent
King Abdulaziz Medical City for National Guard in Riyadh	28	89%	1.28	Excellent
Medical City of King Saud University in Riyadh	24	88%	1.12	Excellent
King Fahd University Hospital in Khobar	12	92%	1.06	Excellent
Dr. Soliman Fakeeh Hospital in Jeddah	11	91%	0.97	Excellent
King Abdulaziz Medical City for National Guard in Jeddah	16	88%	0.96	Excellent
Eastern Health Cluster	35	83%	0.96	Excellent
Riyadh Second Health Cluster	40	80%	0.83	Excellent
King Abdulaziz University Hospital in Jeddah	18	83%	0.78	Excellent
Prince Mohammed bin Abdulaziz Hospital for the National Guard in Medina	9	89%	0.75	Excellent
King Abdullah bin Abdulaziz University Hospital at Princess Nora Bint Abdulrahman University in Riyadh	4	100%	0.72	Excellent
Hospitals of the Armed Forces of the Ministry of Defense in The Fourth Training Sector	16	81%	0.61	Good
King Fahd Hospital of Armed Forces in Jeddah	27	78%	0.60	Good
Johns Hopkins Aramco Healthcare Center in Dhahran	3	100%	0.47	Good
Specialized Medical Center Hospital in Riyadh	3	100%	0.47	Good
General Directorate of Health Affairs in Jazan Region	21	76%	0.44	Good

Private Training Centers

Note:
N = the number of trainees who sat for the Written exam, regardless of the number of attempts.
For details on the Composite Score Scale Ranges corresponding to each performance category, see Appendix C.



Ranking of Training Centers Based on Written Exam

Training Center	N	Pass Rate	Composite Score Scale	Category
Alahsa Health Cluster	13	77%	0.30	Good
Armed Forces Hospitals at the Ministry of Defense in The Third Training Sector	13	77%	0.30	Good
International Medical Center in Jeddah	6	83%	0.24	Good
Security Forces Hospital in Riyadh	18	72%	0.17	Good
Aljowf Health Cluster	2	100%	0.12	Good
General Directorate of Health Affairs in Tabuk Region	2	100%	0.12	Good
Health Services Program in the Royal Commission in Jubail	2	100%	0.12	Good
Jeddah First - Second Health Cluster	32	66%	-0.02	Good
King Fahd Hospital in Medina	16	69%	-0.04	Good
Ministry of Defense Armed Forces Hospitals of Fifth Training Sector	18	67%	-0.11	Good
Dr. Sulaiman AlHabib Medical Group in Riyadh	7	71%	-0.21	Fair
Riyadh First Health Cluster	19	63%	-0.28	Fair
Makkah Health Cluster	51	59%	-0.29	Fair
Sultan Bin Abdulaziz Humanitarian City in Riyadh	1	100%	-0.39	Fair
Hail Health cluster	11	64%	-0.41	Fair
General Directorate of Health Affairs in Aseer Region	22	59%	-0.45	Fair
The Armed Forces Hospital at the Ministry of Defense in the Second training sector in Makkah and Taif	8	63%	-0.56	Fair
Security Forces Hospital in Dammam	3	67%	-0.71	Fair
Directorate of Health Affairs in Jeddah Governorate	25	52%	-0.78	Fair

Private Training Centers

Note:
N = the number of trainees who sat for the Written exam, regardless of the number of attempts.
For details on the Composite Score Scale Ranges corresponding to each performance category, see Appendix C.



Ranking of Training Centers Based on Written Exam

Training Center	N	Pass Rate	Composite Score Scale	Category
Prince Sultan Military Medical City in the First Training Sector	26	50%	-0.87	Fair
Albahah Health Cluster	10	50%	-1.05	Fair
General Directorate of Health Affairs in Najran Region	19	47%	-1.06	Fair
King Abdulaziz Medical City of National Guard in Alahsa	17	47%	-1.09	Fair
Almoosa Specialist Hospital in Alahsa	2	50%	-1.23	Poor
Security Forces Hospital in Makkah	3	33%	-1.65	Poor
Directorate of Health Affairs in Taif Governorate	24	33%	-1.69	Poor
Care Academy in Riyadh	6	33%	-1.72	Poor
Dr. Erfan and Bagedo General Hospital in Jeddah	1	0%	-1.83	Poor
Royal Commission Medical Center in Yanbu	3	0%	-2.36	Poor

Private Training Centers

Note:
N = the number of trainees who sat for the Written exam, regardless of the number of attempts.
For details on the Composite Score Scale Ranges corresponding to each performance category, see Appendix C.





03

Ranking of Training Centers Based on Clinical Exam Results

This section ranks Saudi training centers based on trainees' performance in the 2024 Clinical exam and organizes them into performance categories.

Ranking of Training Centers Based on Clinical Exam

Training Center	N	Pass Rate	Composite Score Scale	Category
King Abdulaziz Medical City for National Guard in Riyadh	30	100%	1.65	Excellent
King Faisal Specialist Hospital and Research Center in Riyadh	21	100%	1.40	Excellent
Riyadh Second Health Cluster	36	97%	1.37	Excellent
General Directorate of Health Affairs in Jazan Region	19	100%	1.32	Excellent
King Faisal Specialist Hospital and Research Center in Jeddah	19	100%	1.32	Excellent
Alahsa Health Cluster	14	100%	1.03	Excellent
King Abdulaziz Medical City for National Guard in Jeddah	14	100%	1.03	Excellent
Security Forces Hospital in Riyadh	14	100%	1.03	Excellent
Directorate of Health Affairs in Jeddah Governorate	13	100%	0.96	Excellent
Medical City of King Saud University in Riyadh	23	96%	0.92	Excellent
General Directorate of Health Affairs in Najran Region	12	100%	0.87	Excellent
King Fahd Hospital of Armed Forces in Jeddah	21	95%	0.81	Excellent
Directorate of Health Affairs in Taif Governorate	11	100%	0.78	Excellent
King Fahd University Hospital in Khobar	11	100%	0.78	Excellent
Ministry of Defense Armed Forces Hospitals of Fifth Training Sector	19	95%	0.69	Excellent
Qassim Health Cluster	19	95%	0.69	Excellent
Riyadh First Health Cluster	19	95%	0.69	Excellent
Dr. Soliman Fakeeh Hospital in Jeddah	10	100%	0.67	Excellent
Eastern Health Cluster	36	89%	0.38	Good
King Abdulaziz University Hospital in Jeddah	15	93%	0.35	Good
Makkah Health Cluster	34	88%	0.29	Good
Prince Sultan Military Medical City in the First Training Sector	19	89%	0.12	Good
General Directorate of Health Affairs in Aseer Region	18	89%	0.02	Good

Private Training Centers

Note:

N = the number of trainees who sat for the Clinical exam, regardless of the number of attempts.
For details on the Composite Score Scale Ranges corresponding to each performance category, see Appendix C.



Ranking of Training Centers Based on Clinical Exam

Training Center	N	Pass Rate	Composite Score Scale	Category
Directorate of Health Affairs in Bisha Governorate	6	100%	0.00	Good
King Fahd Hospital in Medina	12	92%	0.00	Good
Hospitals of the Armed Forces of the Ministry of Defense in The Fourth Training Sector	16	88%	-0.20	Good
Jeddah First - Second Health Cluster	21	86%	-0.22	Good
Dr. Sulaiman AlHabib Medical Group in Riyadh	5	100%	-0.25	Good
International Medical Center in Jeddah	5	100%	-0.25	Good
The Armed Forces Hospital at the Ministry of Defense in The Second Training Sector in Makkah and Taif	5	100%	-0.25	Good
Albahah Health Cluster	10	90%	-0.32	Good
King Abdulaziz Medical City of National Guard in Alahsa	10	90%	-0.32	Good
Hail Health cluster	9	89%	-0.51	Fair
Security Forces Hospital in Makkah	4	100%	-0.58	Fair
Prince Mohammed bin Abdulaziz Hospital for the National Guard in Medina	8	88%	-0.74	Fair
Health Services Program in the Royal Commission in Jubail	3	100%	-0.99	Fair
Johns Hopkins Aramco Healthcare Center in Dhahran	3	100%	-0.99	Fair
King Abdullah bin Abdulaziz University Hospital at Princess Nora Bint Abdulrahman University in Riyadh	3	100%	-0.99	Fair
Specialized Medical Center Hospital in Riyadh	3	100%	-0.99	Fair
Armed Forces Hospitals at the Ministry of Defense in The Third Training Sector	12	75%	-1.50	Poor
Aljowf Health Cluster	2	100%	-1.55	Poor
Almoosa Specialist Hospital in Alahsa	2	100%	-1.55	Poor
Care Academy in Riyadh	2	100%	-1.55	Poor
General Directorate of Health Affairs in Tabuk Region	2	100%	-1.55	Poor
Security Forces Hospital in Dammam	2	100%	-1.55	Poor
Sultan Bin Abdulaziz Humanitarian City in Riyadh	1	100%	-2.33	Poor

Private Training Centers

Note:
 N = the number of trainees who sat for the Clinical exam, regardless of the number of attempts.
 For details on the Composite Score Scale Ranges corresponding to each performance category, see Appendix C.



04

**Appendices: Technical Details and
Validation Analyses Supporting the
Results**

Appendix A:

Detailed Methodology for Ranking Training Centers

This methodology aims to establish a transparent and reliable ranking system for training centers in Saudi Arabia, based on the performance of trainees who took for the Written and Clinical exams in 2024. Robust statistical techniques were applied to ensure fairness across centers of different sizes, ensuring that both small and large centers are assessed on comparable grounds.

Stages of the Ranking Process

01

Adjusting Pass Rates (Empirical Bayes): Pass rates for training centers with small sample sizes were adjusted using an Empirical Bayes approach, which moderates extreme values toward the overall mean. This procedure prevents disproportionate inflation or deflation of results for smaller centers. The formula used in this step is Beta-Binomial Shrinkage:

$$EB_i = \frac{x_i + \alpha}{n_i + \alpha + \beta}$$

Where:

- x_i = number of passers at center i
- n_i = number of trainees who took the exam center i
- α, β = hyperparameters estimated from the data

02

Estimating Statistical Confidence Using Wilson Lower Bound: A conservative confidence bound was calculated for each center's pass rate. This step quantifies the statistical reliability of the results and reduces the impact of random fluctuations. The formula used in this step Wilson Score Interval Lower Bound is :

$$LB\ Wilson_i = \frac{1}{1 + \frac{z^2}{n_i}} \left(\hat{p}_i + \frac{z^2}{2n_i} - z \sqrt{\frac{\hat{p}_i (1 - \hat{p}_i)}{n_i} + \frac{z^2}{4n_i}} \right)$$

Where:

- $\hat{p}_i = \frac{x_i}{n_i}$ = observed proportion (pass rate)
- $z = 1.96$ for 95% confidence
- n = number of trainees who took the exam



Appendix A:

Detailed Methodology for Ranking Training Centers

03

Standardization of Composite Score : The adjusted pass rates (EB) and the reliability measure (Wilson) were combined into a single composite score. Scores were then standardized to allow fair comparison across all centers.

$$\text{Composite Score}_i = \frac{(Z_{EB_i} + Z_{Wilson_i})}{2}$$

Then

$$\text{Composite Score Scaled} = \frac{\text{Composite Score} - \mu}{\sigma}$$

Where μ, σ are mean and standard deviation across all centers.

04

Group centers into performance categories : Using K-means clustering, centers were grouped into four performance categories:

- Excellent
- Good
- Fair
- Poor

Cluster stability was assessed using Silhouette analysis to ensure that the performance categories reflect meaningful differences (see Appendix C).

05

Ranking Within Categories: Clusters were labeled according to average performance, and final ranks were assigned within each group based on the standardized composite score using descending score:

$$\text{Rank}_i = \text{rank}(\text{Composite Score Scaled}_i)$$

Each stage of the methodology was validated using established statistical techniques to ensure:

- **Robustness:** Results are stable despite data variations.
- **Reliability:** The performance of each center is assessed with statistical rigor.
- **Fairness:** Centers are evaluated equitably, irrespective of size.

This ranking framework provides decision-makers and stakeholders with a credible benchmark for evaluating and improving the quality of training centers in the healthcare sector (see next Appendix).

In some programs, all centers achieved identical pass rates or certain categories included only one center. In these cases, inferential tests (ANOVA/LSD) were not performed, as assumptions of within-group variance and adequate sample size were not met. Rankings in such programs reflect **confidence adjusted reliability** centers with smaller trainee counts receive a larger uncertainty penalty rather than differences in actual pass rates.



Appendix B:

Training Centers Distribution Across Ranking Categories

Ranking Category	Written Exam		Clinical Exam	
	Total Number	Percentage (%)	Total Number	Percentage (%)
Excellent Category	13	28	18	39
Good Category	15	32	14	30
Fair Category	13	28	7	15
Poor Category	6	13	7	15
Total	47	100	46	100

ANOVA Results: Significance of Differences Across Ranking Categories

An ANOVA test was conducted to evaluate whether mean scores differed significantly across ranking categories. Results from the LSD post hoc test indicated statistically significant differences between all consecutive ranking groups ($p < .05$) for both the Clinical and Written exams.

Exam	From Category	To Category	Mean Difference	Std. Error	Significance (p)
Clinical Exam	Excellent	Good	1.047	0.097	0.000
	Good	Fair	0.780	0.126	0.000
	Fair	Poor	0.824	0.145	0.000
Written Exam	Excellent	Good	0.890	0.124	0.000
	Good	Fair	0.880	0.124	0.000
	Fair	Poor	1.121	0.162	0.000



Appendix C:

Performance Category Thresholds

This appendix defines the composite score scale ranges used to rank training centers into performance categories.

1. Composite Score Scale Ranges for Performance Categories (Written Exam):

Category	Composite Score Scale Range
Excellent Category	0.72 and above
Good Category	From -0.11 to 0.61
Fair Category	From -1.09 to -0.21
Poor Category	Below -1.23

2. Composite Score Scale Ranges for Performance Categories (Clinical Exam):

Category	Composite Score Scale Range
Excellent Category	0.67 and above
Good Category	From -0.32 to 0.38
Fair Category	From -0.99 to -0.51
Poor Category	Below -1.50



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