



SAUDI COMMISSION FOR HEALTH SPECIALITIES

Incorporating NEJM Knowledge+ in the curriculum of Saudi Board of Internal Medicine; Trial of core knowledge base enhancement

The Saudi Commission for Health Specialities (SCFHS) is a governmental organization that regulates postgraduate training for all health care disciplines. It promotes health through competent health care providers.

Challenge:

- Over the past few years, results of board examinations in internal medicine have been unsatisfactory.
- Root cause analysis revealed defects in formative assessment of residents throughout their residency training. There was no unified source for core knowledge learning. There was no system in place to ensure continuous progress of residents' core knowledge.
- Traditional approaches to exam preparation are time consuming and do not adapt to the unique needs of residents.
- Exam preparation typically involves repetitive practice using non-peer reviewed test questions that may or may not reflect the content evaluated by the certification examination.

Solution:

The Saudi Commission for Health Specialities, NEJM Group and Area9 partnered to use an adaptive learning program, the NEJM Knowledge+ platform, tailored to the national set up needs of the Commission. The program started in January 2020 and it runs for four years. The rationale for considering such a solution is to provide residents with validated educational tool that can assist them in their continuous learning.

Outcomes:

To gain insight into the impact on the performance of residents using NEJM Knowledge+ for their core knowledge enhancement, the Saudi Commission for Health Specialities analyzed data from the Internal Medicine program. Linking the performance of residents using NEJM Knowledge+ with their part one board exam, revealed that there was a direct correlation between residents' performance on NEJM knowledge+ and their performance on the exam. Part One Board Exam is a high-stake exam targeting residents in their first two years of the program. Second year residents are the main target group but first year residents are also permitted to take the exam. This exam is of critical importance because it determines residents' eligibility to the advanced stages of the program.

- Analysis of Part One exam results over the past 4 years showed a significant increase in the pass rate since the launch of the adaptive learning platform NEJM Knowledge+ (Figure 2):
 - As pass rate improved, more residents were able to advance their training to higher stages which resulted in significant reduction in "overcapacity rate" between 2019 and 2022 (Figure 3).
- Students who progressed further on the platform were more likely to pass the exam.
- The high pass rate of residents reduced the overcapacity rate by 83% over 4 years (from 153 residents in 2019 to 28 residents in 2022).

Figure 1 shows that students who pass the final exam (green dots) are, on average, more engaged on the platform than those who fail (orange dots). On average, a student who passes the exam sees 585 questions compared to 287 for a student who fails the exam. Similarly, students who pass the exam get more questions correct (383 vs 181), see more Key Learning Points (338 vs 159) and get more Key Learning Points correct (279 vs 129).

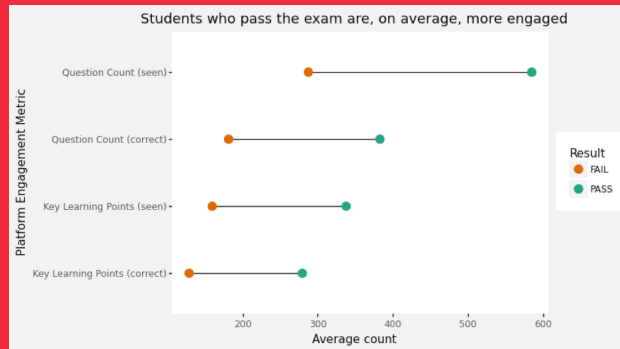


Figure 1: Students who pass the final exam (green dots) are, on average, more engaged on the platform than those who fail (orange dots).

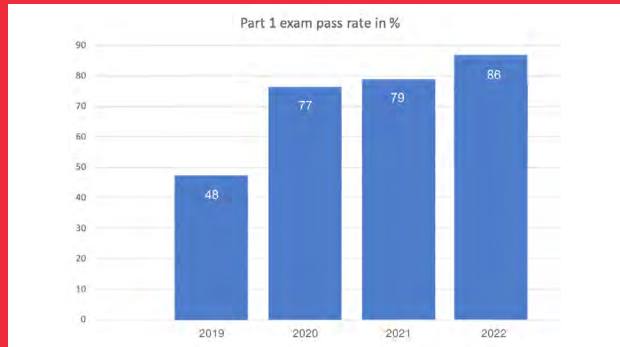


Figure 2: Analysis of Part One exam results over the past 4 years showed a significant increase in the pass rate since the launch of the adaptive learning platform NEJM Knowledge+.

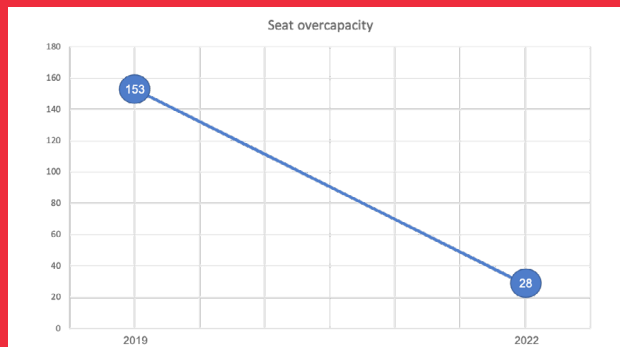


Figure 3: As pass rate improved, more residents were able to advance their training to higher stages which resulted in significant reduction in “overcapacity rate” between 2019 and 2022.

