

Optimizing Board Exam Outcomes: A Structured Exam Preparation Curriculum for Hematology/Oncology Fellows

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BACKGROUND

Certification in Hematology and Oncology requires mastery of increasingly complex clinical knowledge. Despite this, approximately 8% of first-time test takers fail board exams, underscoring the need for innovative educational strategies. Traditional reliance on costly, external review courses imposes significant financial and time burdens on fellows, further highlighting the need for integrated, curriculum-based approaches to enhance exam readiness and learner engagement.¹⁻⁴

METHODS

To address these challenges, the authors developed a standardized board review curriculum aligned with the American Board of Internal Medicine Medical Oncology blueprint. This program was informed by a comprehensive needs assessment, including fellows' in-training examination scores, historical board pass rates, and feedback from trainees. September 2024–May 2025,

monthly virtual sessions were conducted by faculty and chief fellows, delivering focused, high-yield content supplemented by topic-specific quizzes. The curriculum aimed to provide a structured, low-cost alternative to traditional review courses, fostering both engagement and exam preparation.

RESULTS

Effectiveness was assessed through pre- and post-intervention surveys evaluating fellows' confidence levels and study habits, as well as analysis of in-training examination and board exam outcomes. Initial participation data revealed high engagement, with 22 of 29 fellows (75%) completing the baseline survey. Most respondents were aged 30–34 (74%) and female (63%), representing all training years (89% first year; 60% second year; 80% third year). While 79% planned dual Hematology–Oncology certification, 11% focused solely on Medical Oncology.

Baseline study habits varied significantly, with only 10% of fellows studying daily, 25% weekly, and 30% monthly, while 20% had not yet started preparation. The majority (88%) reported using resources such as American Society of Clinical Oncology Self-Evaluation Program and American Society of Hematology Self-Assessment Program. Confidence in existing fellowship board preparation programs was rated as low-to-moderate. However, participation in the structured curriculum rose sharply, with attendance increasing from 10% in prior unstructured sessions to over 50%, and quiz engagement climbing from 3% to 53%. Fellows correctly answered 95% of quiz questions, reflecting a measurable improvement in engagement and comprehension.

CONCLUSION

Preliminary findings indicate that the structured, curriculum-based approach enhances learner confidence and engagement compared to traditional, less organized methods. This model is not only cost-effective and sustainable but also scalable to other specialties facing similar challenges in board certification preparation.

Despite promising results, there is a pressing need for more rigorous research to advance medical education. Evaluating the long-term impact of structured curricula on board exam performance, knowledge retention, and clinical competency is crucial.^{5,6} Insights from such studies will inform the refinement of this model and support its broader application across diverse medical training programs. Furthermore, exploring innovative pedagogical tools, such as technology-enhanced learning platforms and interactive, case-based learning, could enhance educational experience and outcomes for trainees.^{6,7}

In conclusion, this curriculum-based board review model addresses critical gaps in traditional methods, providing fellows with a structured and effective pathway to certification. Its success underscores the importance of prioritizing

medical education research to develop evidence-based strategies that optimize learning and certification success. As medical knowledge continues to expand, innovations are essential to ensure that trainees are well-prepared to meet the demands of their professions while fostering lifelong learning and professional development.

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Implementation of a Novel Interdisciplinary Pharmacology Curriculum in a Hematology/Oncology Fellowship Program

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BACKGROUND

Thorough understanding of cancer therapeutics is a critical component of hematology–oncology (HO) training, with pharmacology forming a core component of the American Society of Clinical Oncology/ European Society for Medical Oncology (ASCO/ESMO) recommendations for a global medical oncology curriculum. Traditional didactic methods, while common, have been associated with variable satisfaction and limited engagement.¹ Recent evidence, including a network meta-analysis of over 21,000 students, demonstrates that active learning strategies, particularly case-based and team-based learning, significantly improve theoretical knowledge, satisfaction, and clinical application in pharmacology

education.^{2–4} Interdisciplinary and interprofessional modules further enhance confidence in medication management and collaborative skills.⁵ The authors created and implemented a novel pharmacology curriculum in their HO fellowship program using a case-based, interdisciplinary format grounded in principles of learning science.

METHODS

The authors used a pre–post design to evaluate and transform the pharmacology training within the HO fellowship program. The pre-existing curriculum, which was organized by drug mechanism of action and delivered via pharmacist-led didactics, was replaced with interactive sessions jointly led by pharmacists and clinicians. These new sessions were organized by disease-type and incorporated real-world cases, including treatment decision making, dosing considerations, patient counseling, and toxicity management, as well as multidisciplinary perspectives. Fellows completed pre- and post-intervention surveys assessing satisfaction, perceived knowledge, and confidence.

RESULTS

Thirty-four percentage of HO fellows filled out the initial survey (11/32), and 17 fellows (53%) completed the post-lecture survey, with results summarized in [Table 1](#). Among the 12 respondents who had attended pharmacology lectures the previous year, there was a 100% perception of significant improvement with the new format. Thematic qualitative analysis emphasized increased absorption of material, increased clinical relevance due to clinician inclusion and case-based format, and general marked improvement. The following are examples of comments from the fellows:

Table 1: Pre- and post-intervention survey results.

Pre-survey statement	% agree, n/total
I did not retain a significant amount from the lectures	63%, 7/11
I did not find the format conducive to learning	73%, 8/11
I would prefer a case-based approach	91%, 10/11
Post-survey statement	
The new format is conducive to my learning	94%, 16/17
The interdisciplinary format enhanced my learning	94%, 16/17
The lectures increased my confidence in prescribing/managing therapies	88%, 15/17
The lectures improved my ability to discuss treatment options with patients/other providers	71%, 12/17

“The inclusion of clinicians and use of case-based learning has greatly enhanced clinical relevance and absorption of material”, and “There is still important ‘at home’ work... but this is a much more digestible way to learn.”

CONCLUSION

HO fellows found a case-based, interdisciplinary, disease-specific pharmacology curriculum conducive to learning and retaining information, and significantly more effective than a passive lecture series organized by drug mechanism of action. This is in line with recent multicenter studies reporting that case-based and active learning formats yield higher satisfaction scores and improved test performance.^{2,6,7} Fellows also perceive structured, relevant, and interactive curricula as superior to traditional formats, with measurable improvements in knowledge and satisfaction.^{6,8} The new format increased fellows’ confidence and abilities in managing cancer-directed therapies, and improved perceived skills related to interdisciplinary patient care.⁹ This curriculum could serve as a model for implementation at HO fellowship programs at other institutions.

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A Single Institution Study Evaluating the Fertility of Young Adults with Malignancy Treated with Immunotherapy and Early Referral to Oncofertility Providers

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BACKGROUND

Immune checkpoint inhibitors (ICI) are used to treat multiple types of cancer. However, there are limited studies on the long-term effects of ICI on fertility. This study seeks to examine factors influencing conception after treatment with ICI and referral rates to the authors' oncofertility program.¹

METHODS

A total of 184 female patients between the ages of 18–45 with malignancies were treated with ICI, from January 2012–December 2023, at a single tertiary medical center. Two patients were excluded due to limited reproductive data. Demographics, oncologic, fertility, and reproductive data were collected and analyzed.

RESULTS

Of the 184 patients, 68 (37.0%) had documented fertility discussions prior to ICI initiation, and 36 (19.6%) patients were referred to reproductive medicine. Of the referred patients, the median age at ICI initiation was 32 years, and 27 (75%) were White. The most common cancers included breast adenocarcinoma (52.8%), hematologic malignancies (25%), and melanoma (13.9%). Twenty-one (58.3%) underwent a fertility preservation cycle (oocyte or embryo cryopreservation). One patient received ovarian stimulation, but oocyte retrieval was not performed due to poor response. There were three patients with successful pregnancies (Table 1). All three were previously treated with nivolumab, and two also received chemotherapy. Of the three patients: one patient used IVF using frozen embryo transfer, to conceive, resulting in two full-term live births; the other two conceived via natural conception, each resulting in one full-term live birth. Time to conception ranged from 12–27 months following ICI completion.

CONCLUSION

Early referral to oncofertility providers in young adults with cancer can increase rates of successful conception and increase utilization of fertility preservation methods. Larger, multi-institutional studies are needed to further delineate the long-term effects of ICI on fertility.

Table 1: Reproductive data for individuals with successful conception following immune checkpoint inhibitors treatment.

Patient number	1	2	3
Age at time of ICI	24	22	21
Diagnosis	Hodgkin lymphoma	Melanoma	Hodgkin lymphoma
Stage	IV	IIIA	IIA
ICI received	Nivolumab	Nivolumab	Nivolumab
Number of Pregnancies Prior to ICI	0	0	1
Number of Pregnancies Following ICI	2	1	1
Number of Successful Pregnancies Following ICI	2	1	1
Fertility Preservation Method	Embryo cryopreservation	Declined	Oocyte cryopreservation
Mode of Pregnancy	IVF via FET	Natural	Natural
Duration After Treatment Until Pregnancy (mo)	12	15	27

FET: frozen embryo transfer; ICI: immune checkpoint inhibitors; mo: months.

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