



Applicant Handbook 2026

Examination Session
January 22nd – January 24th, 2026

Applications Welcomed
September 19th – November 14th, 2025



Mission of the Medical Dosimetrist Certification Board

The mission of the Medical Dosimetrist Certification Board (MDCB) is to steer the advancement of the Medical Dosimetry profession by establishing and maintaining certification and continuing education standards to enhance quality patient care.

Nondiscrimination Policy

The MDCB does not discriminate on the basis of age, color, disability, ethnic or national origin, gender, race, religion, sex, sexual orientation, or any other protected classification under US state or federal law in the administration of its application, examination, or certification activities.

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GENERAL INFORMATION

Description of the Medical Dosimetrist

The Medical Dosimetrist is a member of the radiation oncology team working in collaboration with the medical physicist and radiation oncologist. Through knowledge of radiation oncology treatment machines and equipment and the application of principles of physics, anatomy, and radiobiology, the dosimetrist generates life-saving radiation therapy treatment plans.

What is Certification?

Certification is a voluntary process by which a non-governmental agency formally recognizes specialized knowledge, skills, and ability in a designated area. Certification establishes the minimum standard in the specialty and offers recognition for those who have met this standard.

Certification in Medical Dosimetry offered by the MDCB represents a recognized standard of knowledge and education. Professionals working in the field of Medical Dosimetry can therefore demonstrate mastery of their specialization by meeting the MDCB's eligibility criteria, passing the examination, and participating in the MDCB's ongoing Maintenance of Certification program.

A primary purpose of certification is the protection of the public by providing a means of measuring knowledge through a standardized comprehensive examination. Because the Medical Dosimetrist provides services of critical importance to individuals facing life-threatening illnesses, it is beneficial for the general public as well as other healthcare providers to be able to recognize Medical Dosimetrists who have demonstrated minimal knowledge in the necessary subject areas. Certification is intended to define the field of Medical Dosimetry and to protect and promote the safety and health of individuals requiring the services of a Medical Dosimetrist.

Clinical experience in the area of Medical Dosimetry is therefore required for initial certification. The exam is designed for an individual who has successfully achieved a course of study in Medical Dosimetry. Current clinical experience in Medical Dosimetry is identified by the knowledge and skills described in the test specifications matrix included in this Handbook. Each candidate must therefore assess their own body of knowledge, skills and understanding of the specialty in deciding when to apply for the exam.

Potential Benefits of Certification

Certification offers potential benefits for the professional, the employer, and the public which include:

- Creating a standard for professionals in a particular discipline.
- Identifying professional achievement.
- Offering validation of skills and knowledge and increasing professional credibility.
- Furthering knowledge in targeted areas.
- Demonstrating continuing competence through the requirements of maintenance of certification process.
- Assuring the public and employers that the certificant has met and continues to meet rigorous requirements.
- Providing possible employment advantages over non-certified job candidates.

How was the Certification Exam Developed?

The MDCB was formed more than 35 years ago to address a need identified by the Dosimetry community in the United States to develop a certification exam that characterized Medical Dosimetry as a distinct clinical specialty. The MDCB remains dedicated to the validation, through certification, of a specialized body of knowledge for all professionals working in the field of Medical Dosimetry. The MDCB exam has been administered since 1988. Initially, volunteer subject matter experts identified areas of knowledge and practice for testing, assisted with the validation of the examination, and developed appropriate test questions.

The examination continues to be updated for relevance to current practice through a Job Analysis Survey conducted at a minimum of every five (5) years in conjunction with the MDCB test vendor. This methodology is designed to meet stringent certification industry standards and recognized best practice guidelines. An electronic survey examines more than 150 work-related task and knowledge statements and is distributed to all MDCB certificants and AAMD members totaling more than 5,000 professionals in the field of Medical Dosimetry. Through recognized test industry procedures, volunteer subject matter experts use this data to identify areas of knowledge for testing from the content domains identified and write exam questions to target those areas.

As required by best practices, following the conduct of a Job Task Analysis a Standard Setting Study is conducted to determine a passing score. The passing score identifies what the minimally qualified candidate will know. Each candidate's ability is measured against the determined cut (or passing) score.

Use of the CMD Designation

Certified Medical Dosimetrist (CMD) is the professional designation granted by the MDCB. The CMD credential signifies that an individual has passed the MDCB examination and properly maintains certification in good standing. The MDCB grants limited permission to individuals who have met all the certification eligibility criteria, passed the exam, and received the notification of certification from the MDCB to use the CMD designation granted to them. Use of the CMD credential by individuals who have not been granted certification, or who have failed to properly maintain certification in good standing is prohibited. Improper use of the credential will result in disciplinary action.

The Applicant Handbook

The Applicant Handbook ("the Handbook") is updated for each test administration and describes what is required of each candidate preparing to take the certification exam including valuable information about logistics, content, eligibility, and required procedures. Refer to it for guidance and instructions. General information regarding the exam is available on the MDCB website, www.mdcb.org.

Each applicant must be aware of the information outlined in the handbook and the most current information regarding exam administration, eligibility, application requirements, deadlines, and adherence to the Ethical Standards of the MDCB. Candidates must meet the eligibility requirements in effect at the time of application. Applicants are solely responsible for the timely submission of complete applications.

The MDCB reserves the right to amend or modify the terms or conditions of testing and nothing contained in this Handbook shall be deemed a guarantee or warranty of any type or kind. The MDCB will settle any disputes, which may arise, based on information in the Handbook as well as information provided by the testing company that administers the examination for MDCB.

EXAMINATION APPLICATION AND CONDUCT

The Application

The application for the examination is an online process linked to www.mdcbb.org. You may modify and/or supplement your application with additional information at any time during the application process. With the exception of the request for the Route 2 re-applicant work history references, the MDCB will communicate only with the exam applicant regarding the application. **It is the personal responsibility of each exam candidate to ensure completion of the application by the deadlines outlined. All required elements (application, supporting documentation, and full payment) must be submitted before a review of your application will commence.**

Documentation not provided as outlined in the instructions for completing your application may result in the denial of your application. Electronic copies of required documentation must be in PDF or JPG format. Submission of large or inaccessible file formats will delay or prevent review of your application. **If your information remains incomplete at the time of the final application deadline it will be denied.** The application and all supporting documents received by the MDCB will be reviewed by the MDCB Eligibility Committee and staff only and will remain confidential.

Residents of any country or region to which the U.S. has embargoed goods are not eligible to apply for the exam.

Applicant Checklist

The applicant checklist provided below is a list of the steps applicants for the CMD Examination should follow for preparation to sit for the exam.

1. Review the applicant handbook: - exam administration - eligibility - application requirements - deadlines - Ethical Standards of the MDCB	https://mdcb.org/applicant-handbook
2. Begin the application - Route 1 applicants should provide a <u>diploma</u> and an <u>official transcript</u> with <u>corresponding dates</u>. - Re-applicants should provide <u>CEU documentation</u> that was completed within the <u>last 12 months</u> and includes the <u>MDCB approval numbers</u>.	https://mdcb.learningbuilder.com/
3. Begin the application submission process	Click " Submit for Approval "
4. . . . and pay fees	Click " Pay Fees "
5. Submit the application	Click " Submit Application "
6. Receive confirmation that your application has been successfully submitted	Email from info@mdcb.org and on the "Communications" tab of your Learning Builder Account
7. Check the email account you provided on your MDCB application regularly for notifications	Email from info@mdcb.org and on the "Communications" tab of your Learning Builder Account
8. Once application is approved, prepare for the exam	- Review the test specifications, references and style guide in the applicant handbook, https://mdcb.org/applicant-handbook - Download the practice tests, https://mdcb.org/certification-exam-information/practice-tests - Log in to mdcb.proknow.com to set up your ProKnow account. Before logging in, see the video on setting up your account, https://vimeo.com/420044409, and the video on navigating the platform, https://vimeo.com/420044597. - See the ProKnow Knowledge Skills Checklist for tasks to master within mdcb.proknow.com, https://mdcb.org/PBT-Practice-Questions
9. Within one week of receiving notification that you have been approved, you will receive an email from MDCB's test vendor, Meazure Learning with a link to access the Meazure Learning platform to schedule your exam. If you need assistance in scheduling at the facility of first preference, contact Meazure Support.	testingsupport@meazurelearning.com https://support.meazurelearning.com/hc/en-us
10. Know before you go	- Be familiar with the test site location - Plan to arrive early - Have a valid government-issued photo ID - Have your Meazure scheduling confirmation - Bring your ProKnow log-in and password - Bring your non-programmable scientific calculator - Bring your noise-reduction earphones

Route 1 Eligibility Criteria

- First-time certification candidates must be graduates of a USA Joint Review Committee on Education in Radiologic Technology (JRCERT) accredited Dosimetry program of at least twelve (12) months and hold a Bachelor's degree. Applicants must submit: (1) a copy of the **OFFICIAL diploma***, (2) a corresponding **OFFICIAL transcript** and (3) a **certificate of completion** of clinical requirements. For applicants who have completed a certificate program, an **OFFICIAL Bachelor's degree diploma** must be provided in addition to the JRCERT program **OFFICIAL diploma**. The name on these documents must be consistent and match the name on the application or an **OFFICIAL** name change decree must accompany your application.

*When the **OFFICIAL** diploma cannot be provided by the exam deadline date, a letter executed by the program director on **OFFICIAL** letterhead will be accepted in lieu of the **OFFICIAL** diploma. The graduation date indicated on the letter should correspond to the confer date indicated on the **OFFICIAL** transcript. *The letter serves only as a waiver for the diploma and not for other required documentation.* For students attending a certificate program with a non-English BS (or higher) diploma, an English translation must be provided,

Please note:

The MDCB will provide an aggregated score report for each JRCERT-accredited Dosimetry program. The purpose of providing the score report is only for programmatic assessment, evaluation, and accreditation. The report is not to be used either publicly or to determine individual student results. The MDCB expects each program director to use their score report in a moral and ethical manner. The MDCB will not communicate with any third party regarding either individual applications or candidate scores.

A current listing of JRCERT accredited Dosimetry programs is located at <http://www.jrcert.org/>.

Eligibility Criteria for Re-examination

- Applicants will be required to submit a full application if the prior application (or re-application) preceded the September 2011 exam. **Second and third attempt re-applicants whose original application was prior to 2011 and submitted ARRT registry (or foreign equivalent), Bachelor's degree or Bachelor of Science degree as the educational requirement are able to again submit ARRT registry (or foreign equivalent), Bachelor's degree or Bachelor of Science degree for the educational criteria using the Route 2 application.**
- Dates of all previous MDCB exam applications must be provided as part of the application.
- Route 1 re-applicants will be required to show evidence of 8 MDCB-approved CEUs. The CEUs cannot have been previously submitted and must have been completed within 12 months of the re-application deadline.
- Route 2 re-applicants will be required to show evidence of 24 MDCB-approved CEUs. The CEUs cannot have been previously submitted and must have been completed during the 36 months (or 35 hours per week full-time equivalent) clinical experience and within the three years before the application deadline.

If you have taken the exam in the past and failed more than 3 times since 2006 you must comply with the **"Three Attempt Rule"** as follows:

All exam candidates will be subject to a three-attempt rule. A "no show" or withdrawal for any exam administration will not be counted as an attempt. Beginning with the January 2026 exam, a candidate who has failed the exam will have a five-year period to complete up to two additional attempts. Following the third failed attempt, the candidate will not be eligible for examination for two calendar years. All candidates whose first attempt preceded the January 2026 exam will not be subject to the five-year restriction but must have documented previous attempts to reapply for the exam.

After a failed exam, applicants will sit for the exam for two successive exams based on the eligibility criteria for which they were approved. If the exam is offered more than once in any calendar year, candidates may sit for each administration.

After the two-year waiting period, the candidate may submit an application for examination. Applicants applying following the two-year waiting period will apply as a new candidate and must meet prevailing eligibility requirements and be required to submit eight (8) MDCB-approved continuing education credits.

Instructions for Completing the Application

The Application is available at <https://mdcb.learningbuilder.com>.

- **At no time should an applicant with a previous record create a new record. Applicants unable to access a prior record/application should contact the MDCB office at info@mdcb.org with the subject line "Applicant Unable to Access Application".**
- First-time applicants: click on the orange button "Register as an Applicant" on the index page at <https://mdcb.learningbuilder.com>.
- **Please make note of your login and password information.** This is how you will access the system to review the progress of your application and make any updates to your application or contact information.
- **Please note the 7-digit MDCB number** that is generated upon beginning your application. This will be your MDCB Identification number and will also be used as a means of identification by the test vendor.
- Complete all the fields of the profile information. Improper formats or incomplete information may result in a delay in your communication with the MDCB and the test vendor.
- **Complete your name as it appears on the government photo identification that you will be presenting at the test center on the day of your exam or you will not be permitted admission to write the exam at that time. This includes any designation such as Jr. II, etc.**
- Include the email address with which the MDCB and the test vendor should communicate with you. *Use only that email address for all communication with the MDCB, the test vendor and for your ProKnow login.* Please add info@mdcb.org to your email address book to ensure receipt of all notifications. *Be sure to use the same email address with both MDCB and the test vendor.*
- Include a mailing address.
- If your name is now different than the name that appears on the documentation you will be providing to complete your application, once you click on the **"Submit Application"** button, upload the legal document that references your name change.
- If you require ADA accommodations, before submitting your application, once you click on the Submit Application button, upload signed documentation from a licensed medical professional that details your requirements.
- For re-applicants who have previously applied with ARRT registry, Bachelor's degree or Bachelor of Science degree for the educational criteria, applicants will be asked if they have ever applied for the exam between 2006 - 2010. Once the previous status is confirmed, access to the Route 2 application will be provided.
- Documentation not provided as required by the early deadline will result in "Request for Additional Information" status and will be returned to the candidate for correction by the late deadline. Submission of additional documentation does not guarantee approval. All applicants are notified on the same date of exam status. Documentation not provided as required after the early deadline will result in denial status, whereby candidates will be required to submit an appeal with documentation to supplement the appeal.

Route 1 Candidates

- After completing the profile information, select the Route 1 application.
- Applicants who may not have the **OFFICIAL** documents required by the first application deadline can submit payment before the final application deadline to avoid incurring late application deadline fees. Although payment can be submitted before the late application deadline to avoid incurring late fees, the application should not be submitted until the applicant has graduated.
- Click the **"Begin Application"** button and choose:
 - **"Pay Fees"** – will direct you to the payment screen to complete payment -or-
 - **"Pay Later"** – will direct you to complete the Academic Requirements and **"Identify JRCERT Program."** If you select Pay Later, you can still submit the fees at

any time by clicking the ellipsis (three dots) at the top or bottom of the application and choosing "Pay Now."

- Submitting Academic Requirements:
 - Select the JRCERT-accredited dosimetry program you attended from the drop-down menu.
 - Enter the date the program ended.
 - Confirm your agreement to release your scores to your program director.
 - Upload a scan of your **OFFICIAL JRCERT diploma/certificate** in a PDF or JPG format only. Be sure the entire document is visible in the document window and **is not password-protected**. Applications with documents that are not a scan will be returned to the applicant for update. When the **OFFICIAL** diploma cannot be provided by the exam deadline date, a letter executed by the program director on **OFFICIAL** letterhead will be accepted in lieu of the **OFFICIAL** diploma. The graduation date detailed in the letter must correspond to the graduation date indicated on the **OFFICIAL** transcript.
 - Upload a scan of your **OFFICIAL transcript with a confer date that corresponds to your certificate/diploma in a PDF or JPG format only**. Be sure the entire document is visible in the document window **and is not password-protected**. Applications with documents that are not a scan or where the confer date on the transcript does not correspond to the graduation date on the diploma will be returned to the applicant for update.
 - **New - beginning with the January 2026 exam!** Upload a certificate of completion, provided by your program director, that confirms completion of clinical requirements.
 - If the JRCERT program you attended was a certificate program, upload a scan of your Bachelor's degree (or higher) diploma in a PDF or JPG format only. For students attending a certificate program with a non-English BS (or higher) diploma, an English translation must be provided.
 - Click "**Submit Program for Evaluation.**"
 - Once you click on the "**Submit Application**" button you will be able to:
 - Upload the following if applicable to you:
 - ❖ Name change documentation
 - ❖ ADA documentation.
 - and-
 - "**Pay Fees**" if you haven't already submitted payment. Once you submit payment, your application will be submitted.
 - or-
 - "**Submit Application**" to complete the application process.

You will receive email confirmation once your application has been successfully submitted.

Re-application Candidates

Candidates with a prior application that does not precede the September 2011 exam:

Candidates submitting a re-application must have a prior application or re-application that does not precede the September 2011 exam.

- Select the Re-Application.
- Click the "**Begin Application**" button and choose:
 - "**Pay Fees**" – will direct you to the payment screen to complete payment -or-
 - "**Pay Later**" – will direct you to complete **Request Re-Application** and the Continuing Education Requirements. If you select Pay Later, you can still submit the fees at any time by clicking the ellipsis (three dots) at the top or bottom of the application and choosing "Pay Now."

- Select **Request Re-Application**
 - Confirm if you have been approved to write the exam before
 - Select dates of previous applications for which you were approved.
- Submitting the Continuing Education Requirement:
 - Determine what activities are approved for CE at <https://mdcb.learningbuilder.com/>.
 - On your application, click on the “**Add Activity**” button.
 - Enter your search criteria and select the “**Search**” button. Start with the MDCB course number and no other search criteria.
 - Click the “**Select**” button for the Course you wish to add to your application. The activity submitted must have been completed no more than 12 months prior to the year of the application deadline, November 14th, 2025. Now that it is added to your learning plan, you can upload a file and submit the activity for review.
 - You will need to add and submit documentation for a minimum of 8 credits to your application that **have not previously been submitted on an application**:
 1. The documentation you provide must be a certificate or transcript in PDF or JPG format only and must include your name, the name of the provider and the date the activity was completed, the number of credits and the MDCB activity name and number.
 2. The activity number for the activity you select must correspond to the activity number on your documentation.
 3. All activities submitted for review **MUST BE PRE-APPROVED** MDCB activities listed in the directory of courses.
 4. The date you completed the activity must be between the activity start and end dates identified in the “Search Results”.
 5. If an activity you have submitted is rejected, you can determine the reason for rejection by clicking on the “list” icon next to the activity and reviewing the rejection message.
- Once you click on the “**Submit Application**” button you will be able to:
 - Upload the following if applicable to you:
 - Name change documentation
 - ADA documentation.
 - and-
 - “**Pay Fees**” if you haven’t already submitted payment. Once you submit payment, your application will be submitted.
 - or-
 - “**Submit Application**” to complete the application process.

You will receive email confirmation once your application has been successfully submitted.

Route 1 re-applicants whose initial application preceded the September 2011 exam:

- Will be required to submit a Route 1 application as detailed above.

Route 2 re-applicants whose initial application preceded the September 2011 exam will be required to submit a Route 2 application:

- Select either the “ARRT or Foreign Equivalent” **OR** “Academic Transcript for Bachelor’s degree” or Bachelor of Science degree option that corresponds to the eligibility criteria for which you qualify. **ARRT or Foreign Equivalent** applicants select the organization that is applicable from the drop-down menu.

ARRT applicants:

- Provide your registration number for the organization.
- Provide the expiration date of your registration with the organization.
- Submit a scan of your current ARRT card or foreign equivalent with an expiration date of November 14th, 2025 or later. **No substitution will be accepted for the ARRT card or foreign equivalent.**

Bachelor's Degree or Bachelor of Science Degree applicants:

- Complete the name of the institution from which you received your Bachelor of Science or Bachelor of Applied Science Degree.
- Identify the major you completed at the institution.
- Upload a scan of your **OFFICIAL diploma** in a PDF or JPG format only. Be sure the entire document is visible in the scanned document window. Applications with documents that are not a scan will be returned to the applicant for update.
- Upload a scan of your **OFFICIAL transcript** that corresponds to your diploma in a PDF or JPG format only. The **confer date** (graduation date on your diploma should correspond to the confer date on your diploma/certificate. Be sure the entire document is visible and clear in the document window. Applications with documents that are not a scan will be returned to the applicant for update.
- If you received your Bachelor's, Bachelor of Science or Bachelor of Applied Science Degree in an institution outside the US or Canada, please upload your foreign equivalency evaluation from either FIS or IERF only.
- Submitting Clinical Experience*:
 - Identify the institution(s) where you completed a minimum of 36 months (or 35 hours per week full-time employment equivalent of 5,460 hours) of experience in Medical Dosimetry. Work History must have been completed no more than six (6) years prior to the year of the application deadline, November 14th, 2025.
 - Identify your job title.
 - Identify dates you worked at each institution.
 - Identify the number of total hours worked at each institution.
 - Provide two references for each job experience with their role (CMD or Physicist) and a work email address for each reference. Applications that do not include the references' work email address will be returned to the applicant for update.
- Submitting the Continuing Education Requirement:
 - Determine what activities are approved for CE at <https://mdcb.learningbuilder.com/>.
 - On your application, click on the "Add Activity" button.
 - Enter your search criteria and select the "Search" button. Start with the MDCB course number and no other search criteria.
 - Click the "Select" button for the Course you wish to add to your Application. The activity submitted must have been completed during the 36 months (or 35 hours per week full-time equivalent) clinical experience and have been completed no more than 36 months prior to the year of the application deadline, November 14th, 2025. Now that it is added to your learning plan, you can upload a file and submit the activity for review.
 - You will need to add and submit documentation for a minimum of 24 credits to your application that **have not previously been submitted on an application**:
 1. The documentation you provide must be a certificate or transcript in PDF or JPG format only and must include your name, the name of the provider and the date the activity was completed, the number of credits and the MDCB activity name and number.
 2. The activity number for the activity you select must correspond to the activity number on your documentation.
 3. All activities submitted for review MUST BE PRE-APPROVED MDCB activities listed in the directory of courses.

4. Several activities from a single provider must be presented in a transcript format, not as individual certificates, for each activity.
 5. The date you completed the activity must be between the activity start and end dates identified in the "Search Results".
 6. If an activity you have submitted is rejected, you can determine the reason for rejection by clicking on the "list" icon next to the activity and reviewing the rejection message.
- Click "**Submit for Approval**"
 - Once you click on the "**Submit Application**" button you will be able to:
 - Submit Additional Requirements:
 - ❖ Indicate the country in which you are currently practicing.
 - ❖ Upload a signed letter from your current employer on organizational letterhead indicating your dates of employment.
 - and-**
 - Upload the following if applicable to you:
 - ❖ Name change documentation
 - ❖ ADA documentation.
 - Click "**Pay Fees**" to submit payment.
 - Once you submit payment, click "**Submit Application**" to complete the application process.

***Please note: For exam eligibility purposes, "active clinical Medical Dosimetry experience in the field" is defined by the MDCB as experience in a medical setting creating clinically deliverable treatment plans for radiation oncology patients under the direction of two employees within your department who must be either certified Medical Dosimetrists (with active status on the CMD Verification page linked to the MDCB website) or Medical Physicists. These two references will be contacted directly by the MDCB to attest to the length and content of your experience to supplement your online application. The total length of clinical experience required by your eligibility route must be verified by these two references. For each work experience needed to meet the clinical Medical Dosimetry experience requirement, two references must be identified. For example, if you have worked in different institutions during this time, two additional people will be required to verify the second portion of your experience.**

Detailed instructions will be provided during the online application process which is located at www.mdcbllearningbuilder.com.



Application Deadlines

Applications should be submitted from September 19th, 2025 to November 14th, 2025:

- 1) Regular Application Deadline (without late fee) at 11:59 pm EST, November 3rd, 2025.
Deadline for "Request for Additional Information" status. *All foreign applicants must submit their applications by this deadline.*
- 2) Final Application Deadline (with late fee of \$75) at 11:59 pm EST, November 14th, 2025.
Deadline to submit corrective documentation for "Request for Additional Information."
U.S. applicants only.

ALL APPLICATIONS THAT HAVE NOT BEEN RESUBMITTED AFTER AN ADDITIONAL INFORMATION REQUEST OR ARE INCOMPLETE OR UNPAID AFTER THE FINAL APPLICATION DEADLINE WILL BE DEEMED INELIGIBLE.

Fees

Payment must be made when submitting the online application with a credit card in U.S. dollars. Debit cards are not accepted.

Application Fee: \$ 200

An application fee is required of all candidates. Applicants who may not have the **OFFICIAL** documents required by the first application deadline can submit payment before the final application deadline to avoid incurring additional fees.

Exam Fee: \$ 375

An exam fee must be submitted for each request to take the exam, including re-applications.

Late Fee: \$ 75

A late fee is required for applications submitted after the Regular Application Deadline until the Late Application Deadline. Applications received from 12:00 am Eastern time November 4th, 2025 until 12:00 am Eastern time November 14th, 2025 will be deemed late.

- **Absolutely no refunds will be issued FOR ANY REASON once payment has been submitted whether the applicant submits an application, is deemed ineligible, withdraws the application, withdraws from the exam once deemed eligible, or is a “no-show” on the day of the exam.**
- **A candidate who does not withdraw within a minimum of 72 hours prior to the scheduled exam date or arrives 15 minutes or more after the scheduled exam start time will be considered a “no show.” A \$250 “no-show” fee will be assessed on the succeeding application.**
- **Rescheduling and no-show fees will apply for “no-show” candidates.**

The Application Process

Before candidates can sit for the exam, they must:

- (A) Submit a complete application that meets the MDCB's eligibility requirements and pay for the exam by the final registration deadline and deemed eligible.
- (B) Once in receipt of the email from the testing vendor granting access to the exam vendor platform, set up an account and schedule your exam.

(A) Submitting a complete application:

- All applications must be submitted online through the MDCB CE Center at <https://mdcb.learningbuilder.com>.
- Applicants must review the criteria for the routes to eligibility carefully to determine the documentation required to submit an application.
- All applicants will be required to confirm adherence to the MDCB Ethical Standards and terms and conditions stated in the handbook in conjunction with submission of exam fees.
- Electronic copies of required supplementary documentation should be uploaded in PDF or JPG format only. Submission of large or inaccessible file formats will delay or prevent review of your application.
- All supporting documentation must be legible.
- All regular communication with candidates will be via the application website only.
- **All required elements (application, supporting documentation and full payment) must be submitted before review of your application will commence. If your information remains**

incomplete/or not submitted at the time of the final application deadline it will be denied.

- **It is the candidate's responsibility to ensure his/her application is complete and accurate, including the submission of any attachments applicable.**
- The MDCB is the sole and only judge of each candidate's qualifications to sit for the MDCB Certification Exam. In consideration of the individual exam candidate's application, the moral, ethical and professional standing will be reviewed and assessed by the MDCB Board; the Board may make inquiry of the persons named in the application form and of such persons as the Board deems appropriate with respect to moral, ethical and professional standing.

Testing Accommodations

Reasonable accommodations provide candidates with disabilities a fair and equal opportunity to demonstrate their knowledge and skills in the essential functions being measured by the exam. Reasonable accommodations are decided based on the individual's specific request, disability, documentation submitted, and appropriateness of the request. Reasonable accommodations do not include steps that fundamentally alter the purpose or nature of the exam.

Reasonable accommodations generally are provided for candidates who: have a physical or mental impairment that substantially limits that person in one or more major life activities (e.g., walking, talking, hearing, and performing manual tasks); have a record of such physical or mental impairment; or are regarded as having a physical or mental impairment.

How to Appeal Denied Application Status

- Responses to all candidates will be forwarded via email on **November 21st, 2025**.
- Denied status notifications will indicate the reason for denial and how to submit an appeal to contest a decision of ineligibility.
- If an applicant has been denied, they will be provided one (1) appeal attempt for the current application process.
- Applicants who believe that they have met the eligibility requirements as stated may appeal decisions of ineligibility once only. The eligibility requirements themselves cannot be appealed, only the ability to meet the criteria can be appealed.
- Appeals submitted requesting reconsideration of applications must indicate the specific findings of ineligibility being contested and provide evidence of meeting those findings. Candidates must provide documentation that supports their claim. The eligibility committee will review the appeal and furnish a decision.
- Appeal documentation must be submitted to the appeals portion of the application by 11:59 pm Eastern time on **December 1st, 2025**.
- Responses to appeals will be provided by **December 8th, 2025**.
- The decision regarding appeals is final and cannot be reversed.
- If the applicant is still deemed ineligible, they are eligible to register again and submit another examination fee at a later date.

(B) Contacting the test vendor to schedule a computer-based exam location

- Candidates will receive an authorization to test (ATT) email from the exam vendor approximately four weeks following initial exam status notification.
- The test vendor will not schedule an exam location unless you are in possession of an ATT and the test registration #, which is your MDCB number. Instructions on how to schedule an exam location with the test vendor will be included with the ATT.

- Once the candidate has completed online scheduling of an exam location with the test vendor, an electronic confirmation will be sent to the candidate containing the candidate's name, address of the test center, the date of the test, and name of the test. If you need assistance with scheduling an exam at center that is your first preference, contact Meazure directly at <https://support.meazurelearning.com/hc/en-us>
- If the candidate is registering by phone using the toll-free number, the candidate must give the test vendor operator his or her email address to receive an electronic confirmation.
- The exam will be administered at computer-based test centers throughout the US and Canada. The test vendor also has many other international test site locations.
- The MDCB does not provide recommendations for hotels near test centers. It is the exam candidate's responsibility to make his/her own hotel and travel arrangements for the exam.
- If the MDCB has approved a Testing Accommodations Request, the candidate will receive a Notice of Approval from the MDCB along with the Authorization to Test letter. Candidates who have had Testing Accommodations Requests approved by the MDCB will be scheduled at a testing center that can provide the requested accommodation.

Test Center Requirements

- Original, valid (unexpired), government-issued photo and signature bearing identification is required in order to take an exam. **Name on identification must match name on application.**
- A copy of the Booking Confirmation email received when scheduling.
- Exam Security is a serious matter. In addition to leaving all personal items outside of the exam room, candidates may be asked to turn pockets inside out as well as show that nothing is hidden under shirt sleeves or in the hems of pant legs.
- Masking mandates are at the discretion of the testing center. If masks are mandated in a particular locale, Meazure Learning will follow local guidance in test centers as well. Any candidate or staff member that prefers to wear a mask should feel comfortable doing so.

Examination Arrival Time

Candidates must arrive 30 minutes prior to the test time. The total test time is 230 minutes.

Late Arrival

Candidates will not be permitted to take the exam if they present themselves more than fifteen (15) minutes after the scheduled start time of the exam. Admittance will be refused to the exam and candidates will be required to re-apply as a re-applicant and submit all fees. Please familiarize yourself with the location of the exam site before the day of the test.

Withdrawal, Rescheduling, and No-shows

Candidates may reschedule or withdraw from a testing session up to one week before the first test date. Candidates who do not appear for their testing appointment or try to cancel their exam less than two (2) calendar days before their testing appointment will be marked as a no-show candidate.

Candidates who intend to withdraw before the exam date must: (1) email intent to withdraw to info@mdcb.org with the subject line "Intent to Withdraw" and (2) contact Meazure Learning, the MDCB exam vendor, to cancel a scheduled appointment.

No refund will be issued to candidates who have been approved to sit for the exam but withdraw from the exam prior to the exam date. Candidates who withdraw will be required to reapply to sit for exam and will incur a **rescheduling fee** of \$125 in addition to application and exam fees. Candidates who are deemed no-show will also incur the **no-show fee** of \$250.

Test Center Rules

Candidates are required to be professional, civil and respectful at all times while on the premises of the test center. All exams are continuously monitored by video and audio recording, physical walk-throughs and through an observation window. The Test Center Administrator (TCA) is authorized to dismiss you from the test session for a violation of any of the Test Center Regulations, including exhibiting abusive behavior towards the TCAs or other candidates. If you are found to have violated any of the regulations during your exam, the TCA is required to notify the test vendor and the MDCB. The test vendor, alone or in conjunction with the MDCB, shall then take any further action necessary to sanction your conduct, up to and including invalidation of your test score and/or pursuit of civil or criminal charges.

To ensure that all candidates are tested under equally favorable conditions, the following regulations and procedures will be observed at each test center:

- Candidates should not call their individual test centers regarding instructions to take the exam. **Test centers are not advised of MDCB protocols until just before the exam date.**
- Candidates are admitted only to their assigned test center.
- Candidates should arrive 30 minutes prior to their scheduled exam time for registration and check-in.
- Candidates arriving more than 15 minutes after the scheduled exam will not be admitted.
- **CANDIDATE CAN ONLY ACCESS THEIR LOCKER FOR FOOD, DRINK, OR MEDICINE.** Repeated or lengthy departures from the test room will be reported to the MDCB.
- The MDCB exam does not provide for a scheduled break. Each time you leave the test room you must sign out. Test candidates are not permitted to leave the building during a break.
- All candidates must inform the TCA before accessing a stored item during a break.
- Upon return from a break, without exception, you will be subject to all security checks, present valid ID, sign in and, if required by the test sponsor, provide a fingerprint to be re-admitted to the test room.
- You must return to your assigned, original seat after any break.
- **CANDIDATES WILL BE REQUIRED TO BRING A SILENT, HAND-HELD, SOLAR OR BATTERY-OPERATED SCIENTIFIC CALCULATOR TO PERFORM MATHEMATIC CALCULATIONS RELATED TO TEST QUESTIONS.** Alpha, programmable or paper-tape calculators are NOT permitted. Because of the vast number of calculators available in the marketplace, MDCB is unable to verify brand/models of calculators that meet the requirements. The use of a calculator that does not meet this description constitutes grounds for immediate dismissal from the test. Candidates must supply their own equipment. **THE TEST VENDOR WILL NOT PROVIDE A CALCULATOR.** Borrowing of equipment during the test is NOT permitted. All calculators will be checked prior to the examination.
- Candidates may be provided with two (2) erasable note boards. The note board must be returned to the test center administrator at the completion of testing or the candidate will not receive a score report.
- No written notes are permitted in the testing center. Candidates should, however, note their ProKnow login credentials and bring them to the center.
- Candidates should be aware that not all Test Centers provide noise-canceling ear plugs and should be prepared to provide their own. Personal ear plugs may be subject to a security check.
- MDCB will conduct a post-exam survey for comments on exam items.

Prohibited Items and Examinee Conduct in the Test Center

- **Cameras, cell phones, optical readers, or other electronic devices that include** the ability to photograph, photocopy, or otherwise copy test materials
- Notes, books, dictionaries, or language dictionaries
- Bookbags or luggage
- Purses or handbags
- iPods, mp3 players, tablets, headphones, or pagers
- Computers, PDAs, or other electronic devices with one or more memories
- Personal writing utensils such as pencils, pens, and highlighters
- Google and smart glasses (any glasses with electronics)
- Smart glasses are not permitted. Candidates wearing glasses may be asked to give them to the proctor for inspection. No glasses with electronics, even if they have prescription lenses, will be permitted in the exam room
- Watches, smart devices, and other jewelry except wedding or engagement rings
- Weapons
- Medicine, including cough drops (except as expressly permitted in advance),
- Food and beverages
- Coats and jackets
- Hats, hoods, or other headwear are not permitted in the examination room unless required for religious purposes. All items are subject to inspection by the proctor if behavior suspected to be suspicious is detected.
- Please note that sweaters and sweatshirts without pockets or hoods are permitted to be worn.

MDCB practice policies shall supersede these regulations if a conflict exists.

Emergencies

Every attempt will be made to administer all examinations as scheduled. However, should any problems occur due to the testing vendor the exam will be rescheduled as determined by the MDCB at no cost to the candidate.

During a severe weather event, candidates should check the test vendor's website before heading to their local test center.

MDCB EXAMINATION DESIGN

Structure

The examination is delivered in English only and was designed to test the dosimetry knowledge for U.S.-based practice. The exam contains 155 questions. The time allowed for completion is 3 hours and 50 minutes. A small percentage of randomly embedded un-scored items are included on the exam to obtain and evaluate statistical information for new items. These items are not included in the score calculation. This practice is consistent with industry standards for this type of exam. All scored items have previously been vetted for reliability and validity.

The test content outline below identifies the areas that will be included in the exam (as derived from the 2023 Job Task Analysis). The percentage of questions scored in each of the major categories is shown below.

Test Specification Matrix

MDCB CMD Test Specifications Matrix Derived from the 2023 Job Task Analysis	
Domain	Weight
I: Radiation Physics	14%
1. Identify the types of radioactive decay (e.g., alpha, beta, gamma)	
2. Describe the production of X rays and particle beams	
3. Differentiate between the characteristics of X rays and particle beams (e.g., attenuation, stopping power)	
4. Distinguish between the types of interaction of radiation with matter	
5. Identify treatment machine characteristics (e.g., gamma source, HDR, LINAC, MR, proton, photon, orthovoltage and superficial X-rays)	
6. Recognize geometric characteristics (e.g., magnification, minification)	
7. Recall half-lives of radioactive elements (e.g., cesium, iridium)	
8. Distinguish between imaging modalities (e.g., CBCT, CT, KV/MV, MRI, PET, SGRT)	
9. Recognize the relationship between the Hounsfield unit and the CT density table	
10. Calculate radiation computations (e.g., absorbed dose, activity, dose equivalent, exposure, HVL, radiation units)	
II: Localization	8%
1. Manage patient data (e.g., assess, import, translate, validate)	
2. Consult on patient positioning	
3. Consult on patient immobilization and motion management techniques	
4. Assess simulation parameters (e.g., adequate prep, complete data sets, full treatment windows)	
5. Evaluate rigid image registration, deformable registration, and image fusion	
6. Describe IGRT techniques (e.g., CBCT, CT on rails, fiducials, fluoroscopy, infrared, KV-KV, MV-MV, SGRT, ultrasound guidance)	
7. Construct localization of patient within treatment planning system (TPS)	
III: Treatment Planning	42%
1. Evaluate isodose distributions and dose metrics	
2. Recall site specific clinical oncology (e.g., anatomy, common treatment techniques, disease, dose and fractionation schemes modes of spread)	
3. Review radiobiology (e.g., BED, dose tolerances, hypofractionation, LET, RBE, time dose fractionation calculation)	
4. Identify cross-sectional anatomy	
5. Recognize treatment delivery systems (e.g., advantages, limitations, machine differences)	
6. Define special treatment procedures (e.g., SBRT, SRS, TBI, TSEI/TBE)	
7. Describe planning methodologies (e.g., adaptive radiotherapy, compensator, electron, forward, inverse, MCO, robust planning, stereotactic)	
8. Identify OAR constraints under specific protocols (e.g., AAPM/TG-101, QUANTEC, RTOG, Timmerman)	
9. Describe computer systems management (e.g., archiving and backup, DICOM data transfer, routine maintenance, scripting)	
10. Discuss automated treatment planning processes (e.g., auto-contouring, auto-planning, scripting, templating)	
11. Define planning structures as outlined by ICRU	
12. Assess optimization functions (e.g., EUD, minimum and maximum DVH)	
13. Recognize implanted devices and their impact on planning (e.g., CGMs, fiducial, pacemakers, prosthetics, SpaceOAR gels)	
IV: Dose Calculation Methods	13%
1. Recognize external beam dose calculation and algorithms	
2. Analyze effects of beam modifying devices (e.g., bolus, compensators, Lucite, MLC, partial transmission blocks, wedges)	
3. Compute special calculations as needed (e.g., entrance/exit dose, gap calculations, off axis, re-treatments)	
4. Evaluate the need for corrections for tissue inhomogeneities and density overrides	
5. Evaluate deformable dose accumulations	
6. Identify sources of uncertainty and limitations in computer-based treatment planning (e.g., effects of dose grid matrices, calculation algorithms)	
V: Brachytherapy	5%
1. Identify radioactive source characteristics	
2. Describe HDR and LDR treatment and planning methods	
3. Identify brachytherapy treatment devices (e.g., cylinder, interstitial breast, needles, seed applicators, T&O, vaginal cuffs)	
4. Recognize surveying requirements (e.g., background pre- and post-implant, bedside dose, shielding)	
5. Recognize the role of the NRC and state regulations in dosimetry	

6. Compute brachytherapy calculations	
VI: Radiation Protection	9%
1. Cite ALARA and maximum permissible dose equivalent based on NCRP recommendations and regulatory guidelines (e.g., ICRU, NCRP)	
2. Cite mandatory radiation monitoring requirements for personnel and patients (e.g., worker, non-worker, pregnant worker)	
3. Explain the rationale for treatment vault design requirements (e.g., primary- vs secondary-barrier)	
4. Identify types of radiation detectors	
VII: Quality Assurance & Standard of Care	9%
1. Recognize the purpose of treatment machine commissioning and quality assurance in relation to patient safety	
2. Review plan checks, charts and images	
3. Differentiate types of measurement equipment (e.g., diodes, ion chambers, survey meters, TLD)	
4. Utilize record and verify systems and EMR	
5. Recognize the steps of treatment beam QA measurement and analysis (e.g., electron cut out factors, IMRT)	
6. Identify scope of practice based on AAMD Scope of Practice document and AAMD Practice Standards document	
7. Describe incident reporting process for patient safety (e.g., process improvement, quality improvement, RO-ILS, root cause analysis)	
8. Identify factors and limitations of deliverable plans	
9. Recognize QA requirements of simulation and treatment equipment	

All images on test questions are provided in a head-first supine position unless otherwise noted.

Performance-Based Testing (PBT) Multiple Choice & Contouring Items

A small number of performance-based test (PBT) questions will be included on the CMD exam. Performance-based questions measure candidates' ability to apply learned skills and knowledge. It is considered to be the next generation in certification testing. MDCB exam PBT questions are used to test candidates' plan evaluation skills, contouring skills, ability to evaluate isodose distributions, evaluate dose to critical structures, read DVH's, identify anatomical structures of interest for site specific treatments, and evaluate beam arrangements.

Currently, the MDCB utilizes the Proknow DS platform for each PBT item on the exam. Approved exam candidates will be advised when access to practice on the mdcb.proknow.com platform becomes available. Candidates will set up a free temporary account for the MDCB ProKnow DS platform, using the email address the candidate provided to the MDCB during the application process. **Access to the tutorial will be turned off 72 hours preceding the first day of exam administration. Once the tutorial is turned off, candidates should not login to the MDCB ProKnow platform. The MDCB ProKnow site is monitored. Candidates who log into ProKnow after the tutorial is no longer available and before and subsequent to exam appointments, may have their test scores invalidated for violation of MDCB Ethical Standard 6.**

When setting up an account, go to mdcb.proknow.com. Enter the email address associated with your MDCB account and leave the password section blank. Select "click here to set or reset your password" to complete setup. This process should be completed once a candidate is approved for the examination. This will allow exam candidates the opportunity to familiarize themselves and practice within the platform.

MDCB provides two videos to assist in:

- setting up an mdcb.proknow.com account <https://vimeo.com/420044409>
- navigating the mdcb.proknow.com platform <https://vimeo.com/420044597> once an account has been set up.

If you experience issues with the mdcb.proknow.com site, please contact the MDCB, info@mdcb.org. Do not contact ProKnow as the ProKnow team does not manage mdcb.proknow.com.

For multiple-choice PBT items, candidates will navigate directly from the PBT multiple choice item to the third-party platform, ProKnow DS, to find detail to answer the question. Below the question, just above the answer options A-D, there will be a button on the left which will take you directly to the patient data set referenced in the exam question. Once the data set has loaded, you should maximize the ProKnow screen to view the entire window. ProKnow data is expected to load in 10-15 seconds. When opening a patient scan in ProKnow, if the CT scan appears black/missing, this is not intentional, so please check your window/level settings. You may minimize/resize the window to move back and forth between the data set and the exam question. After reviewing the data set, choose the correct answer within your exam. The overall test time is sufficient to complete all exam items with time to review items marked for review during the test.

Candidates are reminded to close any open tabs for each contour as they work through the ProKnow exam items to avoid confusion between patient scans. After completing the ProKnow test items candidates should logout of ProKnow by clicking on the logo:



*in the upper left corner of the ProKnow webpage to access the drop-down menu for **Logout**.*

Knowledge Skills Checklist for Multiple Choice Performance Based Items

The checklist below details the tasks that candidates should master within mdcb.proknow.com as part of the preparation for the examination. On the exam, candidates will analyze data sets and treatment plans in order to answer multiple choice questions based on the individual plans.

1. **Log in to mdcb.proknow.com.** This site will be separate from any other Proknow.com site that you may have utilized in the past.
2. Turn on/off all contours and individual contours
<https://support.proknow.com/hc/en-us/articles/360019978694-Patient-Structures>
3. Turn on/off all doses & individual doses / add new dose level / change a currently displayed dose level. **All Dose is displayed in Absolute Dose (Gy)**
<https://support.proknow.com/hc/en-us/articles/360019979134-Patient-Dose>
4. Navigate/scroll through images in all 3 planes (axial, sagittal, and coronal) using both the keyboard and the mouse
5. Pan and zoom images in all 3 planes
6. Window level adjustment / Reset window/level
7. Probe Tool for measuring distance and for measuring dose profiles
8. View DVH. Turn on/off all structures/individual structures
<https://support.proknow.com/hc/en-us/articles/360020179393-Patient-DVH>
9. Hide/show DVH statistics (min/max/mean/volume)
10. Change DVH view (cumulative dose / differential dose / relative / absolute)
11. When navigating within your mdcb.proknow.com account, do not adjust any file or account settings.

The following video demonstration will demonstrate each of the knowledge skills listed above:
<https://vimeo.com/420044597>.

Contouring Performance-Based Items

For contouring items, candidates will navigate directly from the contouring item to the third-party platform, ProKnow DS. Candidates should exercise care in reviewing the contouring patient to not accidentally delete the patient. Once deleted, you will not be able to have it recovered during your exam. After carefully reading the question, use the link provided to open Proknow DS. The candidate will be directed to a workspace where you will choose the correct data set referred to in the question. Once the correct data set is loaded, the candidate should

navigate to the “Structures” tab, and then choose “Edit Structure Set” to begin contouring using the structure labeled “structure”. A bounding box may be present to limit the candidate’s need to contour the entire organ during the examination. If a bounding box is specified in the question, the box will be viewable on the data set to guide you during contouring. This will be described further in the checklist below. When finished contouring, hit the “Commit button twice” to finalize your answer and exit out of ProKnow DS to be directed back to the exam.

Knowledge Skills Checklist for Contouring Performance-Based Items

The checklist below details the steps and tasks that candidates should master within mdcb.proknow.com as part of the preparation for contouring items on the examination.

1. Log in to mdcb.proknow.com
2. Choose the “Spine_01_contouring” data set for contouring practice.
3. Choose the “Structures” tab
4. Select “Edit Structure Set” in the top right of the window
5. Identify the bounding box if one is referenced in the question. Remember that additional contouring superiorly or inferiorly past the bounding box will NOT be penalized.
6. Adjust window leveling as necessary for contouring accuracy
7. Highlight the structure labeled “structure” to begin contouring. DO NOT create any new structures for contouring
8. Contouring can be done with the DRAW tool with or without smooth lines turned on
9. Contouring can be done with the PAINT tool with any brush diameter chosen
10. Erase unwanted portions of the contour with draw/paint tool
11. To create more than one contour per slice or create a hole in an existing contour, hold down the ‘Shift’ or ‘Alt’ key and draw/paint outside or inside the existing contour
12. Interpolate between slices
13. Copy from Inferior/Superior Slice
14. Clear Current Slice or Clear all Slices
15. When finished select “Commit” twice to finalize and submit contour

The following is an example of a contouring question which can be used to practice leading up to the examination:

Patient Name: Spine_01_contouring

Use the link to access the contouring workspace. Then open the patient with the name “Spine_01_contouring”.

<https://mdcb.proknow.com/tutorialcontouring/patients>

Using the structure labeled “structure”, contour the sternum within the bounding box (axial slices -10.0 mm to 40.0 mm).

When completed select “commit” TWICE.

Please remember on the day of the exam to bring your ProKnow login credentials with you to the testing center. Testing Center Administrators will allow you to record the login and password before you are seated for your exam.

Sample Multiple Choice Questions

This section contains questions or incomplete statements followed by four options. Choose the best option in each case.

1. A cork or bite block should be placed in the patient's mouth to avoid unnecessary irradiation of the tongue and floor of mouth when simulating and treating the:
 - A. tonsillar area.
 - B. maxillary antrum.
 - C. larynx.
 - D. parotid.

2. Which of the following best describes the energy spectrum for *bremsstrahlung* radiation?
 - A. increasing
 - B. decreasing
 - C. continuous
 - D. discrete

3. The average life of a radioactive isotope with a half-life of 8 days would be:
 - A. 4.0 days.
 - B. 5.5 days.
 - C. 11.5 days.
 - D. 16.0 days.

4. A patient is to be given a 4600 cGy midplane dose in 23 fractions by parallel opposed fields to the mediastinum. The dose to the spinal cord each fraction is 209 cGy. If a spinal cord block is added to the posterior field only, the dose to the spinal cord each fraction is 94 cGy. The spinal cord dose through the treatment course is limited to 4000 cGy. How many fractions must the posterior cord block be inserted?
 - A. 4 fractions
 - B. 5 fractions
 - C. 6 fractions
 - D. 7 fractions

5. Based on clinical experience with total body irradiation (TBI) before bone marrow transplantation and hemibody irradiation, the most important dose-limiting tissue is the:
 - A. lens of the eye.
 - B. spinal cord.
 - C. lung.
 - D. skin.

6. The energy loss rate of a 10 MeV electron in water is approximately:
 - A. 0.51 MeV/cm.
 - B. 0.69 MeV/cm.
 - C. 1.25 MeV/cm.
 - D. 2.00 MeV/cm.

7. Which of the following clinical machines produce(s) photon beams?
 - A. Mobetron
 - B. Cyberknife
 - C. Synchrotron
 - D. Cyclotron

8. Which of the following causes of potential errors in a patient setup for prostate IMRT results in a systematic error?
 - A. organ motion
 - B. stool in the rectum
 - C. bladder filling
 - D. incorrect shifts from reference point

Sample Drag & Drop Questions

In a Drag & Drop question, the exam candidate will be asked to match a "label" box to a "response" box as per the sample below. The "response" box is outlined in red. The "label" box is outlined in blue.

9. Regarding IGRT technologies, link the modalities to the most appropriate disadvantage:

A. Electromagnetic field tracking	Poor image quality
B. MRI -IGRT	Potential for higher imaging dose
C. Fluoroscopic kV-based tracking	Spatial distortion
D. Ultrasound - IGRT	Requires implanted fiducials

MDCB Practice Tests

The MDCB publishes a complimentary practice test as a study aid for the certification exam. The test is composed of items representative of actual test items and is available at <https://mdcb.org/certification-exam-information/exam-dates-and-fees/practice-tests>.

The MDCB practice test, unlike other practice tests, is a true representation of the MDCB CMD exam. Practice tests are intended to be a supplement to exam preparation. Although the questions in the practice test are representative of the exam questions, they do not fully address all the categories and sub-categories of the exam matrix domains. Successful completion of practice tests does not predict successful performance on the CMD exam.

In addition, a tutorial is provided for exam candidates to become familiar with the exam platform. Once a candidate has been approved to sit for the exam, access to the tutorial will be provided.

The Platform Tutorial is an assessment designed to help candidates gain familiarity with the Measure examination software and ensure candidates are comfortable with the features/functions before their Examination. This tutorial may be taken as many times as desired, as this assessment does not contribute to the Examination results.

The MDCB does not endorse pass rates guaranteed by any Medical Dosimetry review course provider. Only the MDCB can warrant the validity of pass rates for the MDCB exam.

REFERENCE MATERIALS

References used for MDCB exam item writing include popular textbooks covering subjects in radiobiology, physics, dosimetry, cross sectional anatomy, and principles of radiation oncology practice such as the following:

- Gibbons, John, Khan's the Physics of Radiation Therapy. 6th ed. 2019.
- Khan, Faiz M. Treatment Planning in Radiation Oncology. 5th ed. 2021.
- Perez, Carlos A. and Brady, Luther W. Principles and Practice of Radiation Oncology. 7th ed. 2018.
- Fleckenstein, P. Anatomy in Diagnostic Imaging, 3rd ed. 2014.

Other popular texts can be found at the AAMD store and Medical Physics Publishing websites. In addition, item writers draw questions from reports that are relevant to current dosimetry practice published by the AAPM, ABS, ASTRO, ICRU, ICRP and NCRP as well as published RTOG clinical trials and NCCN guidelines. Because the practice of medical dosimetry and radiation technology evolves rapidly, it is not possible for MDCB to rely solely on textbooks and published reports for up-to-date information in all subject areas. Dosimetrists are expected to be aware of recent advances in the field and have a general knowledge of topical literature including key journal articles that have impacted the practice. In addition, dosimetrists should understand recent technological advances in radiation delivery equipment and imaging.

Examples of relevant recent journal articles include the following:

- QUANTEC Special Issue. International Journal of Radiation Oncology Biology Physics. Volume 76, Issue 3, Supplement, S1-S160 March 2010.
- Miften, M. e. (2019). Management of radiotherapy patients with implanted cardiac pacemakers and defibrillators: A Report of the AAPM TG-203†. Med Phys 2019 46(1) e757-788.

STYLE GUIDE

The following common terms/acronyms will be utilized on the exam wherever applicable:

2D, 3D, 4D – two-dimensional, three-dimensional, four-dimensional coordinate system
 4D CT – space between “4D” & “CT”
 4-field box technique
 AAMD – American Association of Medical Dosimetry
 AAPM – American Association of Physicists in Medicine
 ABR – American Board of Radiology
 ABS – American Brachytherapy Society
 According to QUANTEC guidelines
 According to NRC guidelines
 According to NCRP (AAPM, etc.) Report #...
 ACR – American College of Radiology
 AIDS – Acquired Immunodeficiency Syndrome
 ALL – Acute Lymphocytic Leukemia
 AML – Acute Myelogenous Leukemia
 ARRT – American Society of Radiologic Technologists
 ART – adaptive radiotherapy
 ASTRO – American Society of Radiation Oncology
 AVG – average intensity projection
 beam-flattening filter
 BED – biologically effective dose
 BEV- beams eye view
 BID – twice daily
 BIRADS – Breast Imaging, Reporting and Data System
 BMD – bone density meter
 Bq – Becquerel
bremsstrahlung
 BSF – backscatter factor
 C-arm LINAC
 CBCT – cone beam computed tomography
 centigrade temperatures used only, no Fahrenheit
 CE – continuing education
 CET – coefficient of equivalent thickness
 cGy – centiGray
 CI – Conformality Index
 CIED - cardiac implantable electronic device
 C/kg – Coulomb/per kilogram
 CLL – Chronic Lymphocytic Leukemia
 CMD – certified medical dosimetrist
 CML – Chronic Myelogenous Leukemia
 CNS – central nervous system
 Cobalt-60
 CRT – conformal radiation therapy
 CSF – cerebral spinal fluid
 CT – computed tomography: computed tomographic (image)
 CTDI – CT dose index

CTV – Clinical Target Volume
 Curie (Ci)
 Dates - January 1st not January 1
 Degree - spell out in stem, use “°” in answer options
 D – absorbed dose
 DIBH – deep inspiration breath hold
 DICOM – digital imaging and communications
 DIR – Deformable Image Registration
 DRR – digitally reconstructed radiograph -
 $d_{\max}$ – depth of the maximum dose
 $D_{\max}$ – maximum dose
 DVH – dose volume histogram
 Elements should be expressed as the following, I-125.
 EBRT - external beam radiation therapy
 EDW – enhanced dynamic wedge
 Electron Rule of Thumb –

	Bentel	Khan
90% (therapeutic)	E/4	E/3.2
80%	E/3	E/2.8

since the MDCB uses both rules of thumb, we have to ensure that the distractors cannot be correct
 EMR – electronic medical record
 EQD – equivalent dose in two fractions

$$EQD_2 = \frac{BED}{1 + \frac{2}{\alpha/\beta}}$$

EUD – equivalent uniform dose
 EPID – electronic portal image detector
 FDA – Food and Drug Administration
 FDG – fluorodeoxyglucose
 FFF – flattening free filter
 FLAIR - T2-weighted-Fluid-Attenuated Inversion Recovery
 FOV – field of view
 fx - fraction
 GE - gastroesophageal
 Geiger-Müller (umlaut over u)
 gEUD - generalized equivalent uniform dose
 GI – gastrointestinal
 GU – genitourinary system
 GTV – Gross Target Volume
 Gy – Gray
 Gy/h – Gray per hour
 GYN – gynecological
 H_e – dose equivalent
 HDR – high dose rate high energy [adj]
 HI – heterogeneity index

high Z reflection target
 high Z transmission target
 high-gradient regions
 HIPAA – Health Insurance Portability and Accountability Act of 1996
 HIV – human immunodeficiency virus
 HU – Hounsfield units
 HVL – half value layer
 ICRU – International Commission on Radiological Units, when indicating particular report, indicate in parens (e.g. ICRU# 100)
 IGRT – Image Guided Radiation Therapy
 IMPT – Intensity Modulated Proton Therapy
 IMRT – Intensity-Modulated Radiation Therapy
 Interfraction
 Intrafraction
 IDL – isodose line
image items
 IP – Intensity Projection
 ITV – Internal Target Volume
 IV – intravenous; intravenously
 lateral scatter spread
 JRCERT – *Joint Review Committee on Education in Radiologic Technology*
 KBP – knowledge-based planning
 Kerma - kinetic energy released in the medium
 kV CBCT – kilovoltage cone beam computed tomography
 kV – kilovoltage
 LAN – local area network
 LDR – low dose rate
 LET – linear energy transfer
 LINAC – linear accelerator
 MALT – mucosa-associated lymphatic tissue
 Mayneord F Factor
 MCO – multi-criteria optimization
 MDCB – Medical Dosimetrist Certification Board
 medical dosimetrist
 MeV – mega electron volts
 mg-Ra-eq – milligram radium equivalent (mg-Ra-eq)
 minIP – minimum intensity projection
 MIP – Maximum Intensity Projection
 MLC – multileaf collimation; multileaf collimators
 mold – [not mould]
 Monte Carlo method
 MRI-guided radiotherapy
 mR/h – Roentgen per hour (mili)
 MRI – magnetic resonance imaging
 MR LINAC
 MSAD – multiple scan
 MSF – multiple static fields
 mSv – (mili Seivert)
 MTD – maximum tolerance dose
 MU – monitor units
 MVCT - Megavoltage CT Imaging
 multi-regression target

MV – Megavoltage (photons)
 NCCN – National Comprehensive Cancer Network
 NCRP – In the United States, the National Council on Radiation Protection and Measurements, when indicating particular report, indicate in parens (e.g NCRP# 100)
 nonuniform
 nonuniformity
not – lower case and underlined when used in an option
 NPO – nil per os
 NRC – In the United States, the Nuclear Regulatory Commission
 NRG - in the United States, maintains guidelines for normal organ contouring including RTOG contouring atlases. NRG Oncology is a cooperative clinical trial group made up of the National Surgical Adjuvant Breast and Bowel Project (NSABP), the Radiation Therapy Oncology Group (RTOG), and the Gynecologic Oncology Group (GOG).
 NSAIDs – nonsteroidal anti-inflammatory drugs
 NSCLC – non-small cell lung cancer
 NTCP – Normal Tissue Complication Probability
 numbers need to appear in subscript - $T_1N_0M_0$
 OAF – off-axis factor
 OAR – organ at risk
 ODI – optical distance indicator
 OER – oxygen enhancement ratio
 off-axis dose
 OSLD – optically stimulated luminescence dosimeters
 P – permissible dose equivalent
 PACS – picture archiving and communication system
 pathlength calculation
 PBC - pencil beam convolution algorithm
 PDD – percentage depth dose
 percentage – spell out in stem; use “%” symbol in options
 PET – positron emission tomography
 PHI – protected health information
 Power law
 POP - parallel opposed lateral technique
 PRV – Planning Risk Volume
 PSA – prostate-specific antigen
 PTV – Planning Target Volume
 QA – Quality Assurance
 Q or QF – quality factor
 QMD – Qualified Medical Dosimetrist
 QMP – Qualified Medical Physicist
 QUANTEC – Quantitative Analysis of Normal Tissue Effects in the Clinic
 RBE – relative biological effectiveness
 REM- roentgen equivalent man
 RO – Radiation Oncologist
 ROI -region of interest

RO-ILS – Radiation Oncology Incident Reporting System®

RSO – radiation safety officer

RTOG – Radiation Therapy Oncology Group

SAD – source-to-axis distance

SAR – scatter-air ratio

SBRT – stereotactic body radiation therapy

SCD – source to collimator distance

SDD – source-to-detector distance

SFD – source-to-film distance

SGRT – surface-guided radiation therapy

SIB – simultaneous integrated boost

slice-by-slice

SRS – stereotactic radiosurgery

SSD – source-surface distance

STIR – short tau inversion recover or short T1

SUV – standard uptake value

Sv – Sievert

TAD – target-to-axis distance

TAR – tissue-air ratio

TBI – total body irradiation

TCP – tumor control probability

TD – tolerance dose

TE – echo time

TERMA – total energy released per mass unit

TG – Task Group (TG reference to AAPM TG Reports)

TGF – transforming growth factor

TLD – thermoluminescent dosimeter

TMR – tissue-maximum ratio

TNM – tumor node metastasis

TPR – tissue-phantom ratio

TPS – treatment planning system

TR – repetition time

TRUS – transurethral ultrasound study

TSEI – total skin electron radiation

TSI – total skin irradiation

TURP – transrectal resection of the prostate

TVL – Tenth Value Layer

Ultrasound – (never abbreviated)

Use Factor

UV – ultraviolet

VMAT – Volumetric modulated arc therapy

VSD – Virtual source distance

WAN – wide area network

X ray [n]

X-ray [adj]

x-ray [v]

Z – atomic number

EXAMINATION RESULTS

Approximately 6 weeks after the examination, scores are provided to candidates at <https://mdcb.learningbuilder.com>. The MDCB exam is a pass/fail exam. Scores are **not** based on a curve as is typical for non-certification testing and represent only individual overall performance. Each candidate's ability is measured against a determined passing (cut) score identified by the Standard Setting Study, a recognized industry practice. Thus, each candidate is measured against the same standard. Candidates are **not** required to have a passing score in each of the seven domains of the exam in order to achieve a passing score. Passing scores are based on the total number of exam questions correct.

The exams are graded electronically, and the collective data reviewed and analyzed by a PhD psychometrician/statistician. Several quantitative indicators are used by the psychometrician to help determine the reliability and validity of the collective examination scores. Examples of these parameters include the biserial, p-values, and equater values. The biserial statistic compares the statistical relationship on each question for examinees based on their performance on the question and the test as a whole; the p-value statistic analyzes the percentage of examinees who have gotten a question correct; and the equater values analyze statistical relationships between previous and current questions. These are only a small component of the overall values collectively psychometrically analyzed.

Actual scores are not provided. Fail reports with diagnostic code details will be provided, in order that candidates can assess their performance in each of the content areas. Please keep in mind that all content areas do not have the same number of questions, therefore, comparison of diagnostic code information should not be made from one content area to another, nor should a comparison be made from one form of the examination to another.

The results of the exam will remain confidential and are provided only to the exam candidate and the MDCB. An aggregate score for all Route 1 candidates for a particular program will be

made available to program directors of the JRCERT program. Successful candidates will receive a wall certificate and earn the right to use the title "Certified Medical Dosimetrist".

CMD candidates can be assured of the reliability of the score reporting. Every examination is initially scored in the test center, then scored a second time in the operational scoring system at Measure Learning's data center and scored a third time by an independent Measure Learning statistical system, and the scores from these three systems are compared to be certain that the correct results are reported.

Score Confirmation

Candidates who wish to have results confirmed by the MDCB testing company, can request a "confirmation of score." Please note that the confirmation process is solely meant to verify the accuracy of your exam result. Raw or scaled scores will not be provided. You must submit your request in writing by mail to the MDCB Office.

The deadline for requesting a score confirmation is 30 days after the date your results were posted for your review.

The fee for an exam score confirmation is \$250.

CERTIFICATION AND ACCEPTANCE - GENERAL GUIDELINES

This section applies to, but is not limited to test conditions, test security and test validity. The Medical Dosimetrist Certification Board shall either retain or reserve the sole right to determine whether or not scores on the examination are valid or invalid. The acceptance of a candidate's application to take the examination or the scoring thereof or the release of said test results to any party shall not act in any way to amend the right of the Medical Dosimetrist Certification Board to determine whether such scores achieved thereon are valid or invalid in whole or in part. A determination that an examination and the scores achieved thereon are invalid can be made at any time by the Board. The Board also reserves the right to cancel any scores that may already have been reported when subsequent information raises doubt of reported score validity.

Unlike cases of individual candidate misconduct, occasionally testing irregularities occur that affect a group of test takers. Such problems include, without limitation, administrative errors, defective equipment or materials, improper access to test content and/or the unauthorized general availability of test content, as well as other disruptions of test administrations (e.g., natural disasters and other emergencies). When group testing irregularities occur, the test vendor will conduct an investigation to provide information to the Board. Based on this information, the Board will direct the test vendor either not to score the test or to cancel the test score. When it is appropriate to do so, the Board will arrange with the test vendor to give affected test takers the opportunity to take the test again as soon as possible, without charge. Affected test takers will be notified of the reasons for the cancellation and their options for retaking the test. The appeal process does not apply to group testing irregularities.

Confidentiality and Conduct Agreement

When a candidate applies to take the examination, he or she is demonstrating his/her understanding of, and agreement to conform to the level of professionalism and ethics expected by the Medical Dosimetrist Certification Board in relation to test taking and must comply with the MDCB Ethical Standards. The MDCB Ethical Standards are available at www.mdcb.org. By making application to sit for the examination, applicants are acknowledging their understanding that the examination and its contents are proprietary and

confidential. Candidates are prohibited from disclosing or reproducing any portion of the examination in any fashion or from recreating or attempting to recreate any portion of the examination or any test item for any reason. Candidates are prohibited from dissemination of any information concerning test content to any individual or any entity for any purpose whatsoever. Any conduct that the Medical Dosimetrist Certification Board reasonably believes to be designed or intended to breach test security or to disseminate examination content can result in the invalidation of test scores and can result in civil and/or criminal prosecution. The Ethical Standards apply to persons holding certification credentials from the MDCB and to persons applying for examination and certification by the MDCB in order to become Certified Medical Dosimetrists.

Any candidate's conduct during or following the examination which the Medical Dosimetrist Certification Board reasonably believes to be in violation of the foregoing conditions can result in score cancellation. Candidates agree and understand that test scores can be cancelled if there is reason to believe through test administrator observations, statistical analysis and/or other evidence that any test score or scores may not be valid or that any candidate was engaged in collaborative, disruptive, or other unacceptable behavior during or after the administration of the examination.

Candidate Misconduct

The Medical Dosimetrist Certification Board administers an examination that serves an important public function, and no misconduct will be tolerated.

In an instance where the Medical Dosimetrist Certification Board believes individual candidate misconduct has occurred, the candidate is notified and is given an opportunity to provide additional information.

If, during the administration of an examination, a test administrator believes misconduct is taking place, certain options shall be available to the test administrator.

1. A test administrator can dismiss a candidate from the test and report that to the Medical Dosimetrist Certification Board, stating the reason that the action was taken.
2. A test administrator can choose not to dismiss a candidate from the test; however, under such circumstances, the test administrator will file an irregularity report with the Medical Dosimetrist Certification Board, describing his or her observations.

In either event, when a test administrator reports that a candidate may have committed an act of misconduct during an examination, the candidate's test record is reviewed, and the Medical Dosimetrist Certification Board reserves the right thereafter to take appropriate action, including the cancellation and/or invalidation of the relevant test score.

The Medical Dosimetrist Certification Board has the unqualified right to question any test score the validity of which is in doubt because a score appears to have been obtained unfairly or because the Medical Dosimetrist Certification Board has reason to believe there has been a breach in test security. In the event that the Medical Dosimetrist Certification Board determines that a candidate's individual test results be withheld, or that a group of results will be withheld, the Board will notify the candidate or the group.

Upon written request or application in accordance with the appeal procedure, a candidate can request a hearing. The determination as to whether an appeal shall be granted is made by the Medical Dosimetrist Certification Board taking into consideration the circumstances of the invalidation decision.

Ethical Standards Procedure for Individual Candidate Misconduct

In the event a candidate's scores are withheld or canceled due to specific individual misconduct as deemed by the MDCB, the Ethics Complaint Procedures for ethical violations will be followed. Candidates should review the Standards at

<http://www.mdcdb.org/about-mdcb/ethical-standards>. The Ethical Standards outline the procedures for Summary Suspension, Hearing and Appeals processes. Adverse decisions of the Board/Ethics Committee will result in revocation or suspension of the CMD designation, as well as, publication to appropriate authorities.

MAINTENANCE OF CERTIFICATION

Registry of Certified Medical Dosimetrists

Medical dosimetrists become certified by the MDCB upon passing the examination and are eligible to use the credential of Certified Medical Dosimetrist, CMD. All Certified Medical Dosimetrists, who meet maintenance of certification requirements, will appear in the MDCB's public Certificant Directory.

Annual Fees and the Five-Year Continuing Education Cycle

As a recognized member of the health-care field providing critical care to individuals facing life-threatening illnesses, once an individual becomes a CMD, it is his/her sole responsibility to confirm renewal of his/her credential, including annual payment, maintenance of the appropriate number of continuing education credits for each recertification cycle, making necessary updates to contact information and adhering to the Ethical Standards set forth.

Certification is valid for one (1) year. **Each CMD must pay an annual registration fee to have their credential registered beginning with the first year following successful exam results.** This registration process permits use of the CMD credential. A wall certificate with seal will be issued for each five-year period upon receipt of the annual registration fee and completion of 50 MDCB approved continuing education credits. The CMD credential is to be renewed by December 31st of each calendar year. A 30-day grace period, with monetary penalty, will be allowed until January 31st. Failure to submit the renewal fee may result in loss of the CMD credential. Dosimetrists who have not paid the registration fee will not be allowed to use the credential "CMD" and will not be listed in the registry of Certified Medical Dosimetrists. Reinstatement of the credential can be achieved only via the terms of the Lapsed Credential Policy or by again passing the MDCB certification exam.

Along with being registered each year, the MDCB's Maintenance of Certification Documentation Program also requires 50 hours of participation in MDCB approved educational activities in each individual's five-year renewal cycle and must be recorded by each individual in their personal learning plan. The MDCB is responsible for establishing and managing credentialing and renewal processes for CMDs. Credential renewal is granted to those CMDs who have demonstrated current cognitive capability in the field of Medical Dosimetry by appropriately documenting participation in continuing education activities. The MDCB defines continuing Medical Dosimetry education as activities that are planned, structured and related to the practice of Medical Dosimetry. The Scope of Practice of a Medical Dosimetrist and Practice Standards for the Medical Dosimetrist are AVAILABLE ON THE AAMD WEBSITE and define relevance to the practice of Medical Dosimetry for the Medical Dosimetrist.

Please note: Credit accumulation for those who are successful on the exam commences in January following the year in which the exam was taken.

The MDCB also conducts regular audits of all continuing education documentation. CMDs who are nearing the expiration of a current CMD five-year cycle, will be advised of non-compliance and potential for the CMD credential to lapse at the end of the year if no documentation for the 5 year/50 credit qualification is provided.

Maintenance of Certification Policies

Please refer to the MDCB website to find policies relevant to Maintenance of Certification, for example:

- Temporarily Disabled CMD Policy
- Lapsed Credential for CE Non-compliance Policy
- Lapsed Credential for Non-payment of Fee Policy.

REVOCATION OF CERTIFICATION AND APPEALS

The MDCB has the right to revoke any certificate that it has administered in the event that the recipient engages in conduct which is a violation of the Ethical Standards of the MDCB. Additionally, fraud on the part of any candidate in the application process is grounds for denial or revocation of certificate. A review process is provided for any candidate whose certificate has been revoked. Candidates who desire to appeal must do so in writing within 45 days of receiving notification of revocation of certificate. All appeals requests must be made to the President of the MDCB in writing via the address below.

Medical Dosimetrist Certification Board
1120 Route 73, Suite 200
Mount Laurel, NJ 08054

Toll-free (866) 813-MDCB or (866) 813-6322
info@mdcb.org

Certification Making a Difference