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ACCREDITATION

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ACRO Accreditation
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MANUAL

February 2020

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In addition, appreciation is expressed for ongoing support and commitment to the accreditation process to all the following ACRO members who have contributed, and continue to contribute, to the success of ACRO Accreditation:

ACRO Executive Committee | Drs. Sheila Rege (President), Joanne Dragun (Vice-President), William Noyes (Secretary-Treasurer), and Eduardo Fernandez (Chairman)

ACRO Chancellors | Drs. Steven Eric Finkelstein, Jaroslaw T. Hepel, Dwight Heron, Shane Hopkins, Charles Thomas II, Catheryn Yashar, Arve Gillette

ACRO Accreditation Disease Site Team Leaders | Drs. Jaroslaw Hepel & Seth Kaufman (Breast Cancer); Dr. Navesh Sharma (Gastrointestinal Cancer); Dr. Peter Orio III (Genitourinary Cancer); Dr. O. Lee Burnett (Gynecologic Cancer); Dr. Dwight Heron (Head & Neck Cancer); Dr. Shilpen Patel (Lung Cancer); Dr. Mary Hebert (Lymphoma & Sarcoma); Dr. Dheerendra Prasad (Neurological Cancer)

ACRO Accreditation Physics Committee | Claudio H Sibata, PhD, Chair; Ray Kaczur, MS; Bhudatt R. Paliwal, PhD; and Matthew Podgorsak, PhD

ACRO Accreditation Administration Committee | Audrey Hyde, BS, HCA, RT(T), Chair; Martha Mychkovsky, MS, RT(T); Craig Hansen, A.A.S, B.S., RT(T); and Jim Sinicki, MBA, R.T.(R)(T)

ACRO Accreditation Staff | Valerie Guth (Accreditation Coordinator); Shannon Bozarth (Interim Executive Director)

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I. BACKGROUND

A. Radiation Oncology

Radiation therapy is one of the most important modalities available for the treatment of cancer, and is used as part of the initial treatment in approximately one-third of newly diagnosed cancer cases according to the American College of Surgeons National Cancer Data Base (www.facs.org/cancer/ncdb/).

Additionally, approximately 25% of patients will receive further radiation therapy treatment sometime during the course of their disease. To provide an estimate of the prevalence of cancer, data from the National Cancer Institute's Surveillance Epidemiology and End Results (SEER) program revealed that 1,762,450 men and women (870,970 men and 891,480 women) will be diagnosed with and 606,880 men and women (321,670 men and 285,210 women) will die of cancer of all sites in 2019 (http://seer.cancer.gov/). The age-adjusted incidence rate is 442 per 100,000 men and women per year. The median age at diagnosis for cancer of all sites was 66 years of age. Approximately 1% was diagnosed under age 20; 2.7% between 20 and 34; 5.2% between 35 and 44; 14.1% between 45 and 54; 24.1% between 55 and 64; 25.4% between 65 and 74; 19.6% between 75 and 84; and 7.8% 84+ years of age. As of January 2019, it is estimated that there are 16.9 million cancer survivors in the United States (8.1 million males and 8.8 million females). This represents 5.0% of the population. The number of cancer survivors is projected to increase by 29.1%, to 21.7 million, by 2029. The number of cancer survivors is projected to grow to 26.1 million by 2040 (https://cancercontrol.cancer.gov/ocs/statistics/index.html).

Although the vast majority of radiation oncology utilization addresses malignant disease, ionizing radiation may also be used in the treatment or prevention of several non-neoplastic conditions, including prevention of heterotopic ossification post-joint surgery, pterygium, keloids, and trigeminal neuralgia, to name a few.

B. The American College of Radiation Oncology

The American College of Radiation Oncology (ACRO) was founded in 1991 to meet challenges facing radiation oncologists and the need for an independent voice to represent the interests of both practitioners and patients in the evolving socioeconomic and political spheres. Prior to the College's establishment, no organization existed specifically to address the professional practice issues of radiation oncology. The concept of the College surfaced in the late 1980s following several seminal events: 1) the concern of Medicare Manual Transmittal 1200 on daily treatment management reimbursements; 2) the implementation of the Relative Value Scales in April 1989; and 3) the Graham Rudman Act payment reductions. Collectively, these issues, if not addressed, could have made it financially difficult to continue the practice of radiation oncology.

In examining the impact of these legislative and regulatory initiatives, it had become evident to radiation oncologists across the country that the complex issues of patient management, initial diagnostic work up, and integrated multimodal management had evolved differently in radiation oncology from other high technology specialties, especially diagnostic radiology. Radiation oncology, which originally had its roots as a surgical subspecialty, and had more recently been regarded as a niche in radiology, had become its own independent specialty in the 1950s and 1960s, with specific issues unique from all other medicine specialties. Radiation oncologists recognized the need for a specialty college to specifically represent their interests in these areas. They wished to establish an organization to focus on the professional aspects of radiation oncology and to ensure adequate funding necessary for state-of-the-art patient care. They further understood that these interests often diverged significantly from similar issues in the specialty of diagnostic radiology.

To address these issues, a group of twenty-three radiation oncologists signed a letter in late 1990 calling for the formation of the American College of Radiation Oncology (ACRO), and invited all interested radiation oncologists to an organizing meeting that was held in March 1991. At the meeting, a Constitution and By-laws were adopted, and temporary officers were elected. The first annual ACRO meeting was held in October 1991 at the Marriott Hotel in Washington, DC. Five officers were elected at the meeting along with ten board members. All areas of practice were represented on the board including academicians, hospital-based physicians, and freestanding practice physician-owners. The college was initially registered in Delaware and later in Pennsylvania. The official seal with the motto, ***veritas*** (truth) in the center of the logo was established.

At the end of 1992, the Health Care Financing Administration (HCFA), now known as the Centers for Medicare and Medicaid Services (CMS), published proposed drastic cuts in the technical component of radiation oncology reimbursements of up to forty percent. These payment reductions would have had a devastating effect on both hospital-based and freestanding practices, and hindered the ability to pay technical salaries and update equipment. In answer to widespread concerns, Government officials stated that only a well-done survey of costs could modify these cuts. ACRO, at that time a fledgling organization, designed and administered the needed survey in less than three months. This survey helped prevent most of these devastating cuts, thus preserving the levels of payment necessary to deliver quality radiation oncology care. This event brought great attention to the College and demonstrated the effectiveness of a focused professional organization. Such actions helped solidify and grow the College's membership.

ACRO sponsors a variety of resources for its members including this practice accreditation program, advocacy for reasonable reimbursement for radiation oncology treatments from CMS and Congress, an annual clinical conference, broadcast email "ACRO Alerts," references for support of payment denials, and a forum for residents to pursue areas of specialty not available in their own residencies. It has supported residents in its commitment to prepare young physicians in all aspects of radiation oncology practice.

In summary, ACRO was formed by academic, hospital-based, and private practice-based radiation oncologists in response to serious threats to the delivery of radiation therapy. The organization has evolved over time to become a forum for new technologies, a means of support for resident and physician education, and for advocacy for our patients and practitioners.

The following material represents the ACRO Accreditation program designed to meet practice challenges in an increasingly demanding practice environment. The material included is for the use of radiation oncologists, medical physicists, practice managers and staff, interested in attaining ACRO accreditation of their practices. Additional information is available on our website - www.ACRO.org.

C. Optional Service

In addition to undergoing a practice peer review to become ACRO Accredited, an optional service that is not related to the assessment for accreditation is available to help a practice obtain an expert external mini-review of its billing/coding documentation compliance at the same time. This review is voluntary and an additional fee is required. The assessment would be carried out by Revenue Cycle, Inc. (RCI), ACRO's preferred-provider of billing and coding consultation services.

Five of the charts submitted for the medical review would be selected for this analysis. During this chart review, RCI would focus on the following areas:

- Documentation of services performed.
- Inclusion of medical necessity statements, physician orders, and documented supervision for services, among other associated criteria.
- Accurate code capture based on services provided.
- Complete billing of captured services.
- Overall compliance with regard to documentation, charge capture and billing.

RCI will comment and make recommendations regarding its findings and provide the practice with a score based on the chart review. This score will not influence the practice's accreditation status; however, it will provide a measure of the current documentation and billing compliance, and provide some quantitative evidence to determine if improvements are needed. After receiving the results of this mini-review, a more in-depth assessment can be arranged directly with RCI for an extensive chart review and possible focused training regarding the practice's documentation and billing processes. A professional discount would be granted based on an ACRO Accreditation status.

This optional service can be selected on the application form on p55.

II. ACRO ACCREDITATION

From its mission statement, "***ACRO strives to ensure the highest quality for radiation therapy patients and promotes success in the practice of radiation oncology through education, responsible socioeconomic advocacy, and integration of science and technology in the clinical practice."*** Consequently, the College is committed to ensuring that patients in need of radiation therapy receive the very finest treatment possible. One way the College attempts to achieve this is through practice accreditation. ACRO developed its accreditation program in 1995, consisting of practice standards for radiation oncology. Practice accreditation is a voluntary process in which professional peers identify standards indicative of a quality practice, and an audit is conducted to assure that these standards are followed. Since its establishment, the ACRO Accreditation has undergone periodic revisions to reflect clinical and scientific advances within the field, as well as changes in the external landscape, providing for the safe and effective practice of radiation therapy.

ACRO Accreditation operates under the guidance of the ACRO Standards Committee, which in turn reports to the ACRO Board of Chancellors. The Standards Committee recognizes that the safe and effective use of ionizing radiation requires specific, highly specialized training, skills and techniques as well as properly calibrated, maintained, and functioning equipment. ACRO Accreditation is designed to evaluate and accredit those practices that strive to meet the requirements needed to deliver safe and effective radiotherapy to their patients and to assure all stakeholders of that fact.

ACRO Accreditation will follow the content of this manual as the basis of the review. Any updates made before the next published edition of this manual will be posted on the ACRO Accreditation website at https://www.acro.org/accreditation/. Review of submitted documents will be based on the most current version of this manual and updates posted on the website. **Practices are advised to review carefully this manual and any updates posted before submission of requested documents.**

A. Standards Committee

The purpose of the Standards Committee is to assist ACRO members in preparing to meet local, state and national practice and regulatory standards as applicable to the specialty of radiation oncology. The Chair of the Standards Committee oversees ACRO Accreditation and the Medical Director reports to the Chair of the Standards Committee, while also providing monthly reports to the ACRO Executive Committee.

B. Accreditation Management

1. Medical Director (reports to the Chair of Standards Committee and to the Executive Committee of the ACRO Board of Chancellors)

- Creates formal recommendations, based on the clinical audits performed by the disease site teams, the onsite medical physics reports, and the onsite administrative reports.
- Functions as the interface between Executive Committee of ACRO Board of Chancellors, the Disease Site Team Leaders, the Medical Physics Director and the Administrative Director.
- Forwards a formal report and recommendations of the accreditation status for each practice evaluated to the Executive committee for review and action.
- Prepares and forwards a formal report (with recommendations) of ACRO Accreditation to the Executive Committee prior to each board meeting.
- Represents ACRO Accreditation at various national meetings.

2. ACRO Disease Site Team Leaders (report to the Medical Director)

- Defines and updates chart review measures in respective disease site annually or as needed.
- Conducts annual review of measures with the Medical Director to assure relevance based on current medical literature.
- Reviews chart measures with other members of the disease site group to assure appropriate chart measures.
- Works with ACRO Accreditation staff to assure timely review of charts.
- Assembles team of chart reviewers to review charts and programs seeking accreditation.
- Interacts with other Disease Site Team Leaders and Medical Director to determine criteria for full/provisional/denied accreditation.
- Serves on the ACRO Standards Committee.

3. Medical Physics Director (reports to the Medical Director)

- Oversees the medical physics aspects of the program.
- Chairs the ACRO Accreditation Physics Committee, provides advice and counsel on issues pertaining to medical physics as part of the practice of radiation oncology.
- Creates formal recommendations, based on the standards of care within the field of medical physics.
- Ensures that the on-site medical physics surveyors follow guideline criteria, based on clinically accepted standards of care.
- Forwards a formal report and recommendation of the accreditation status for each reviewed practice to the Medical Director for review and action.
- Represents the program at various meetings.

4. Administrative Director (reports to the Medical Director)

- Oversees the administrative review aspect of the program.
- Creates formal recommendations, based on the standards of care within the field of radiation oncology administration.
- Ensures that the on-site administrative surveyors follow guideline criteria, based on clinically accepted standards of care.
- Forwards a formal report and recommendation of the Accreditation status for each reviewed practice to the Medical Director for review and action.
- Represents the program at various meetings.

5. Staff (reports to the Medical Director), the Accreditation Coordinator, the Disease Site Review Administrator, the Executive Director

- Provide administrative and management support to all aspects of ACRO Accreditation
- Interface with the Practice Coordinator to facilitate the accreditation process
- Work with Disease Site Team Leaders and Case Reviewers
- Schedule physics and administrative surveyors
- Issue final documentation of accreditation status
- Handle all financial transactions

C. Accreditation Process

1. Application: A practice interested in applying for accreditation must first:

- Submit an application form with the appropriate fees. (see p46 for fee schedule)
- Identify the Practice Coordinator and his/her address.
- Include in the initial application the address of the practice seeking accreditation if different from the Practice Coordinator's address.
- Submit a business associate agreement, with ACRO as the business associate, to be signed by both parties.
- Full payment must be submitted with application in order to continue the accreditation process. If a practice rescinds its application, a refund (whether full or partial) is up to the sole discretion of the ACRO Accreditation Management Committee.

2. Website Access: The ACRO Accreditation Coordinator will assign a username and password for the ACRO Accreditation Website (www.acroaccreditation.org). The Practice Coordinator will upload a complete list of patients (ID# only, disease site, location identifier, and procedure used) who have been treated at the practice and have completed at least one month of follow-up during the past 12 months. Twenty cases for a principal practice, and fifteen cases for an additional practice, will be quasi-randomly selected by ACRO for review.

3. Medical Chart Review: The medical records identified by ACRO for chart review must be uploaded by the Practice Coordinator into the online system. All charts must be in PDF format and the content of each component should fit into the defined categories (see p17, pp18-25) The full set of charts (15 for a principal practice and 10 for an additional practice) must be assigned before a site visit can be scheduled. This will help facilitate an onsite follow up of any issues discovered in the chart review process. When uploading the charts, it is critical to follow the directions and submit only the required information. Failure to upload the chart information properly will result in significant delays in the accreditation process. The rules for medical chart review are:

- Fifteen charts will be reviewed for each Principal Practice, and ten charts will be reviewed for each Additional Practice. An attempt to represent the patient mix of the practice will be made by the ACRO Accreditation staff when selecting charts to be reviewed. The reviews are scored against established chart review measures. These measures have been approved by the Disease Site Team Leaders and the ACRO Executive Committee and are provided later in this manual. (pp26-53)
- Each chart is scored on a 100-point basis, with a score of 75 considered the minimum. To pass the case reviews, the average chart score must be 80 or above and no more than two charts can have a score below 75 out of fifteen charts reviewed, or no more than one chart can score below 75 if ten charts are being reviewed. If either of these standards is not met, a recommendation for provisional accreditation will be given for this section. If neither of these standards are met, a recommendation of denied accreditation will be given.

4. Online Survey: The Practice Coordinator (or designee) is required to complete the survey form on the website. Once the information has been submitted and the medical charts have been assigned (see #3 above), a site visit for physics and administrative surveys will be scheduled. The Practice Coordinator will be notified of the names of the physics and administrative surveyors for approval to avoid conflict of interest by any parties.

5. Onsite Surveys: When the Practice Coordinator approves the proposed physics and administrative surveyors, they will arrange for a joint site visit date directly with the Practice Coordinator.

6. Report Preparation: After the site visit has been completed, physics and administrative reports are submitted to the ACRO office. The physics report is then reviewed by the Physics Committee, chaired by the Medical Physics Director, and a recommendation for full, provisional or denied accreditation is submitted to the ACRO Accreditation Medical Director. The administrative report is reviewed by the Administrative Director and a recommendation for full, provisional or denied accreditation is submitted to the ACRO Accreditation Medical Director.

7. Final Report: A final report is prepared by the ACRO Accreditation Coordinator along with a cover letter announcing the accreditation decision signed by the Executive Director of ACRO on behalf of the College. All final recommendations for accreditation status (Full, Provisional, or Denied) submitted to the ACRO Executive Committee by the Medical Director, for final action on behalf of the ACRO Board of Chancellors, must be supported by the Physics Director and the Administrative Director.The final report will be sent to the practice four to six weeks from the completion date of the onsite surveys and chart review.

8. Full Accreditation: To Receive Full Accreditation, which is granted for 3 or 4 years depending on the term length chosen, all sectional recommendations (medical, physics, and administrative) must be made.

9. Provisional Accreditation: A recommendation of provisional accreditation by any one of the three reports (medical, physics, or administrative) will automatically result in Provisional Accreditation, not subject to negotiation. Provisional Accreditation will be in effect for no more than one year. Remediation of the issues that caused Provisional Accreditation can be corrected at any time during that year but must be submitted with sufficient time for review by the ACRO Executive Committee, and Full Accreditation will then be awarded upon satisfactory remediation of the issues for the balance of three or four year term. Any corrective action that has patient safety implications must be addressed immediately. Failure to respond to the corrective actions in a timely manner may cause an expiration of provisional accreditation (see #10).

To upgrade Provisional Accreditation to Full Accreditation or to allow Denied practices to reapply the following conditions will apply:

a. A recommendation for provisional accreditation based on the medical chart review will necessitate review of additional charts with a satisfactory score. For a Principal Practice, an additional twenty recent charts uploaded after corrections have been implemented must be reviewed and meet the standards in #3. An additional fee of $1,500 will be charged for this review. For an Additional Practice, an additional fifteen recent charts uploaded after corrections have been implemented must be reviewed and meet the standards in #3. An additional fee of $1,000 will be charged for this review. Such charts must come from a case list that occurred after the necessary changes cited in the report granting Provisional/Denied status have been made. If the practice is recommended for Provisional again, then another 12 months will be given and they must pay for another review.
b. A physics and/or an administrative recommendation for provisional accreditation can be upgraded to a recommendation for full accreditation with adequate demonstration and/or documentation of the required corrections. The same follows for allowing a Denied practice to reapply. In unusual cases, it may be necessary to schedule an additional site visit to verify the corrections made. This can be carried out at an additional cost to the practice. All necessary corrections must be documented sufficiently to substantiate the corrections. A simple statement that the required corrective actions have been implemented is insufficient.
c. Advancing from Provisional to Full Accreditation status is valid for the balance of the three or four year term.
d. Submission of the necessary documentation shall be made electronically to the Accreditation Coordinator and shall include the following items: a cover letter, description of remedial actions, and an appendix of supportive documentation. If the information cannot be submitted electronically, the Practice Coordinator shall contact the Accreditation Coordinator for further instructions.

10. Denied Accreditation: A recommendation of denied accreditation by any one of the three reports (medical, physics, or administrative) will automatically result in Denied Accreditation, not subject to negotiation. A practice receiving Denied Accreditation is required to wait until all corrective measures have been implemented before reapplying for accreditation. Documentation of remedial actions for the required corrective actions is mandatory before reapplication in the same manner described above. If a practice believes this is due to missing information or an error on the part of ACRO Accreditation, the Practice Coordinator may submit a letter of appeal to the ACRO Accreditation Management Committee. This will allow for a review of the process conducted to reach the decision of Denied. It will not constitute a re-review, nor will a re-review be conducted. If an error is found, the practice's accreditation status may change accordingly.

11. Reapplication of Provisional/Denied Practice: ACRO Accreditation reserves the right to refuse a reapplication from any practice that has not, within the timeframe, remediated the issue(s) which resulted in provisional or denied status from an initial application. Additional practices that reapply separately due to denial of accreditation must pay a $5,000 fee rather than the typical $9,000 (Principal)/$3,500 (Additional) for a three year term or $12,000 (Principal)/$4,500 (Additional) for a four year term.

12. Substantive Practice Changes: The accreditation decision is based upon the information submitted to ACRO Accreditation by the practice and the findings reported by the site surveyors. Significant changes in the practice, including turnover of key personnel, may affect the accreditation status, and must be reported to ACRO Accreditation by the Practice Coordinator. A change in practice ownership must be reported to ACRO Accreditation within 30 days after the transfer. Upon receipt of a notice of significant changes in the practice, it will remain accredited during a review period, and the Practice Coordinator will be asked to submit documentation of any changes in physician leadership, physics leadership, or practice policies and procedures. Following the review, ACRO Accreditation will promptly notify the Practice Coordinator of the accreditation status. In unusual circumstances, ACRO Accreditation may determine that there have been "substantive changes" to the practice and re-application for accreditation may be required. It is important to keep contact information up to date with ACRO Accreditation throughout the Accreditation period to ensure timely information and important documentation are communicated to the practice.

D. Practice Review

During the above steps in the ACRO Accreditation process, the specifics of the practice, as outlined below, are reviewed.

1. Practice Demographics: During the accreditation review, demographics of the practice will be examined to help define the nature of the patients treated and the services offered. Requested demographic aspects of the practice include the following:

1.1. Contact person, address, telephone number, and email address.
1.2. Type of practice and affiliations.
1.3. Number of consultations.
1.4. Number of new patients treated.
1.5. Number of patients re-treated.
1.6. Number of patients treated with curative intent, palliative intent, and for local tumor control.
1.7. Number of simulations.
1.8. Number of external beam treatments.
1.9. Number of brachytherapy procedures.
1.10. Anatomic sites and stages (AJCC, UICC, etc.) of diseases treated.
1.11. Types of special treatment procedures.

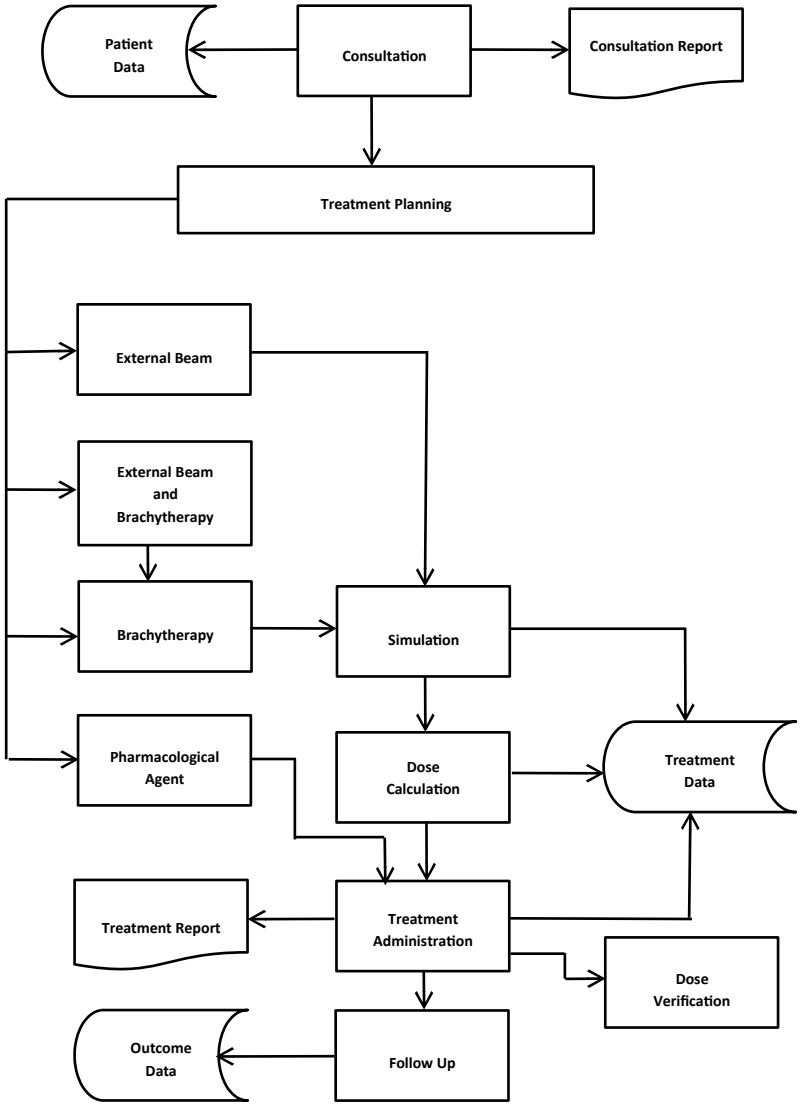
2. Process of Radiation Therapy: The process of radiation therapy treatment consists of a series of steps. In the case of external beam radiation therapy, these steps typically follow in a logical order. When brachytherapy is utilized, the sequence is similar, but may be more or less complicated depending on the specific type of treatment. Figure 1 below outlines the general process of radiation therapy. The process of radiation treatment within the practice will be evaluated for appropriateness of care. A quasi-randomly selected sample of patient care medical records will be requested for off-site review and additional patient medical records be evaluated at the time of the on-site survey.

2.1. **Consultation:** A practice must demonstrate that it performs an adequate clinical evaluation by taking a patient history, performing a physical examination, reviewing pertinent diagnostic studies and reports, determining the extent of the tumor for staging purposes, and communicating with the referring physician and certain other physicians involved in the patient's care.

2.2. **Informed consent:** Informed consent must be obtained and documented prior to the initiation of any procedure and or treatment by the responsible radiation oncologist. This must include a discussion and documentation of the proposed treatment, its rationale, options for other treatment if appropriate and a review of the logistics, risks and side effects of treatment. Use of tattoos and photographs in the treatment position must also be mentioned. If a patient is participating in a clinical research trial, he or she must sign the practice's standard informed consent as

The Process of Radiation Therapy

Figure 1



well as a study-specific informed consent. Although site specific consents are preferred, the informed consent must be specific for special procedures and high risk treatments performed (i.e. SRS, TBI, Radiopharmaceuticals, etc.). Brachytherapy consents shall specify the type of brachytherapy proposed. The following documentation is required on the consent: patient's name, medical record number and/or DOB, site, side (if applicable), signatures of physician, patient or patient's representative, witness, date and time. If a significant period of time has elapsed since the original consent was signed, a new consent is obtained or the patient is asked to affirm the previous consent. Additional consent is needed for clinical research trials and/or anesthesia and for special procedures.

2.3. **Prescription:** The prescription by the Radiation Oncologist shall include: volume (anatomical site, not generic names as PTV or boost) to be irradiated, treatment side (laterality) when appropriate, applicators used, descrip- tion of fields, radiation modality, energy, dose per fraction, number of fractions per day, number of fractions per week, total number of fractions, total tumor dose, and the point or isodose line of dose normalization specification. The prescription must be signed and dated by the Radiation Oncologist prior to the first treatment.

2.4. **External Beam and Brachytherapy:** External Beam and Brachytherapy: External Beam treatment may be selected by the Radiation Oncologist who must select the beam energy(ies) and technique. If the Radiation Oncologist determines external beam treatment is appropriate, he/she must select the beam energy(ies) and technique. The Radiation Oncologist shall ensure that applicators are properly in place and obtain localization images, if applicable.

2.5. **Treatment planning:** When ionizing radiation is used, a practice must demonstrate that processes are in place to allow a Radiation Oncologist to plan treatment, including selecting the beam characteristics and/or the radionuclide sources, method of delivery, doses, sequencing with other treatments, communication with and supervision of the Radiation Physicist and Dosimetrist. The practice uses a written physician clinical treatment planning directive, signed and dated by the physician to include, but not limited to, the following criteria: Treatment Intent, Modality, Technique, Dose constraints for target volumes, Organs at risk, Time/dose considerations, Special tests, Ports and Devices. The Radiation Oncologist shall review the dose calculations and in the case of computerized planning the dose distributions

2.6. **Combined modality therapy:** If the Radiation Oncologist determines that other treatment modalities (e.g., chemotherapy, hyperthermia, radiation sensitizers, radioprotectors, immunotherapy, etc.) shall be combined with external beam irradiation or brachytherapy, the Radiation Oncologist must document such procedures in the radiation therapy chart, including such critical factors such as drug(s), dose(s), route(s) of administration and timing of such therapy in relation to the delivery of the radiation therapy.

2.7. **Simulation:** The establishment of the area(s) of treatment is termed simulation. Simulation is carried out by a Radiation Therapist [RT(T)] or a Radiologic Technologist [RT(R)] under the supervision of the Radiation Oncologist. Simulation is used for both external beam treatments and brachytherapy as well as combination treatment. Simulation may be accomplished on the treatment machine, with radiographic units, fluoroscopic units, CT-Sim, PET-CT, CT, MRI or PET scanners. Similarly it may be carried out on a computer planning system with virtual simulation utilities using data from some of the above sources.

2.7.1. Quality and safety assurance practices (time out) must be demonstrated and documented in the patient's medical chart prior to the start of simulation; documentation shall be signed and/or initialed and include the date and time of at minimum two credentialed members of the time out team. The Time Out team, RT(T) and/or RT(R), physicist, physician as applicable shall conduct the final Time Out to include but not be limited to verification of: correct patient, consent for procedure requested, correct site and side (if applicable), correct levels [spine] (if applicable), correct anatomic position, correct immobilization devices, and correct procedure consistent with physician's documented orders.

2.7.2. Patients shall confirm their identity by stating full name and date of birth. Staff must not state patient's name and date of birth and ask patient to confirm. Practice must have a written protocol in place for any patient unable to confirm his/her patient identity and participate in the time out process.

2.7.3. Any discrepancy noted during the time out procedure shall require the time out process stopped with documentation signed and/or initialed with date and time noted in the patient's medical chart. Documented clarification of noted discrepancy shall require a new time out completed with signatures, date and time.

2.7.4. In addition, a process must be in place to check and document pregnancy status (if applicable) and presence of a cardiac implantable device.

2.8. **Physician simulation requests and documentation:** The Radiation Oncologist requests simulation to be performed in order to accomplish a reproducible treatment position and to determine treatment portals/beam arrangements. The following documentation shall be included on the simulation order: body site/side, scanning parameters, patient positioning, devices required for immobilization, treatment planning technique (e.g. 3-D conformal, IMRT, etc.), request for contrast media and any other special orders such as full bladder, protocol, dental consult or pregnancy testing needed.

2.9. **Simulation procedure and documentation:** At the time of simulation, the patient will be identified by two independent methods and the identification methods shall be documented in the patient chart. The simulation technologist or radiation therapist will document details of the set-up simulation including such information as treatment position, devices created and/or used, use of any contrast media and placement of tattoos. All field setups shall be documented with detailed photographs and/or diagrams that are properly labeled /dated. The practice uses a written physician simulation note signed and dated by the physician documenting participation and approval of simulation procedure and image review/approval.

2.10. **Dose calculation and/or computer planning:** Dose calculations may be carried out by hand or by computer by the Radiation Oncologist, Medical Physicist, Dosimetrist or RT(T).

These calculations must be independently checked (by another person or another method of calculation) and clearly documented before administration of the first radiation treatment and at any time that any changes are made. Dose Calculation and/or computer planning shall be signed and dated by the Radiation Oncologist prior to treatment.

2.11. **Treatment aids:** A Practice must be able to determine when, or if, to use devices to aid in positioning and immobilizing the patient, shield normal tissue, or improve the radiation dose distribution. Such devices include, but are not limited to, beam attenuators (e.g., wedge filters, compensating filters, etc.), beam shapers (e.g., custom-molded or generic metal blocks), and various devices to aid in patient positioning (e.g., breast boards, belly boards, treatment chairs, etc.) and/or immobilization (e.g., bite blocks, custom-molded masks, cradles, etc.).

2.12. **Radiation Treatment Delivery:** The next step in external beam radiation therapy is the actual treatment. The Radiation Therapist, following the prescription and plan of the Radiation Oncologist, shall carry out daily treatments. The radiation therapy treatment parameters must be verified by the RT(T) to ensure proper treatment and recorded daily as the treatments are administered. The therapist will demonstrate the following safety and quality assurance practices:

2.12.1. Prior to initiation of treatment, all information in the treatment prescription is to be completed, signed and dated by the physician.
2.12.2. Prior to initiation of treatment and/or any revisions to a treatment plan, performs and documents a pre-treatment chart check.
2.12.3. Verify patient identification and document daily by two independent methods. Patient records are not uploaded in the R&V system until the patient is ready to be treated and the identification is properly done.
2.12.4. After setting up the patient and before delivering the external beam radiation, two therapists must perform verification that the patient treatment parameters being loaded in the R&V is for the actual patient being treated and document the daily procedural time out in each patient's medical chart.
2.12.5. Maintain daily records and document technical details of the treatment administered.
2.12.6. Provide documentation of bolus when used.
2.12.7 Provide signatures/initials of at minimum, two licensed therapists involved in the delivery of treatment.
2.12.8. Perform and document a weekly review of chart to check for completeness and accuracy.

2.13. **Treatment verification:** The practice uses a written physician order and has a filming policy for type of imaging required and frequency to permit proper delivery of radiation therapy. Radiographic images (e.g. port films) shall be performed at the initiation of treatment, at such times that any of the radiation fields are modified, or when any new radiation fields are applied.

2.13.1. **Port Films Check:** Subsequent images are taken at minimum weekly thereafter or as often as prescribed. These images shall be compared with simulation images to verify that the treatment beams and the fields planned at simulation are well matched. Documentation of port films must be maintained as an X-ray film or electronically stored image. Physician review and approval of the images shall be documented and signed/dated per filming policy (i.e. Pre-port images – approved prior to 1st treatment and any treatment field changes – prior to treatment). The port film images shall be approved within 24 hours.

2.13.2. **IGRT images:** In the case of Image Guided Radiation Therapy (IGRT) images shall be obtained at the initiation of treatment and then as often as necessary (at least once a week). The images and shifts are to be reviewed and approved by the radiation oncologist prior to the patient's next treatment. The practice must have a protocol in place for IGRT noting when shifts are to be made and a Quality Assurance (QA) program to review the results of the IGRT process.

Verification of the administered dose must be performed for each field at the initiation of treatment with that field. These procedures must be repeated if a treatment area or dose prescription changes. Dosimeters may be used ***in vivo*** to measure and record actual doses at specific anatomic sites.

2.13.3. **IMRT and other special procedures:** In the case of Intensity Modulated Radiation Therapy (IMRT) and other special procedures the practice must have a written protocol for dose verification prior to the initiation of treatment or if the fields are modified during treatment. A QA program for verification of the results of the dose verification must also be in place.

2.14. **Continuing medical physics consultation:** While a patient is undergoing active radiation therapy the Medical Physicist must evaluate the execution of the Radiation Oncologist's treatment plan to ensure that the treatment is being administered properly. The Medical Physicist must review the patients' records on a regular schedule (such as weekly or after, for example, every five treatments), and document this review in the patient chart. Each Practice must document this procedure in its Quality Management Program.

2.15. **Radiation treatment management:** Each patient must be evaluated by the Radiation Oncologist at least weekly while receiving treatment. The patient must be assessed for response to treatment and treatment-related sequelae. These evaluations must be documented and measures must be taken to address issues related to treatment. Any changes in the planned treatment that require new calculations, or even a new treatment plan, must be documented in the radiation therapy record. The patient and/or referring physician shall be informed of the progress of treatment whenever deemed appropriate by the Radiation Oncologist. At the time of completion of a course of radiation therapy, the Radiation Oncologist must assess the patient's progress, tumor response, and sequelae of treatment and communicate his/her assessment to the referring physician. The Medical Physicist shall perform a final chart review. This review will document that the patient completed the course of radiation therapy as prescribed or if there is documentation of any deviation from treatment. This shall be completed within five days of the last treatment.

2.16. **Follow-up medical care:** Upon completion of the prescribed course of radiation therapy the Radiation Oncologist must arrange for ongoing follow-up care of the patient. This may be performed by the Radiation Oncologist, in conjunction with other

physicians, or may be delegated to other physicians as appropriate for the individual patient.

3. Clinical Performance Measures: The following clinical documents must be part of each patient's record, and will be reviewed as part of the chart audit:

3.1 Histopathologic diagnosis
3.2 Site of disease (or ICD – 9 code)
3.3 Stage of disease
3.4 Pertinent history and physical examination performed by a Radiation Oncologist
3.5 Treatment plan
3.6 Documentation of informed consent to treatment
3.7 Simulation record, when applicable
3.8 Dosimetry calculations
3.9 Graphic treatment plan (e.g. isodose distribution and DVH) when applicable
3.10 Daily/weekly/total radiation therapy dose and treatment volume records
3.11 Weekly record of Radiation Oncologist's treatment management
3.12 Continuing weekly medical physics review
3.13 Port image(s) documenting each treatment field, when applicable
3.14 Record of brachytherapy or radionuclide therapy procedure(s), when applicable
3.15 Treatment summary note
3.16 Follow-up plan

4. Policies and Procedures: The practice must maintain a comprehensive book of Policies and Procedures that accurately describes the practices in place. Policy and procedure books must be up-to-date and reviewed at least annually. Any new or updated policies must be reviewed with staff and documented. There must be an annual review by staff of policies pertaining to their specific duties. Policies and procedures shall always reflect original effective date, latest revision date and approval by medical director.

The practice demonstrates its commitment to enhance safety and minimize risk to patients and staff by following guidelines set by professional and healthcare organizations such as ACRO, ACR, ASRT, AAPM, ASTRO, Joint Commission, and OSHA.

5. Physical Plant: The practice provides an environment that is clean and safe for patients and staff. During the onsite survey the physical plant of the practice is reviewed to determine if patient care is being given in a reasonable manner consistent with applicable laws, regulations and standards. Aspects of physical plant review include the following:

5.1. Parking: There must be adequate parking for patients and their families, including a sufficient number of handicapped-designated spaces.
5.2. Accessibility: The practice must be accessible for patients including those with disabilities.
5.3. Waiting areas: There must be a comfortable waiting area sufficient for the needs of patients and their families.
5.4. Reception/Business areas: There must be sufficient space for a reception area, record storage, and business functions of the practice.
5.5. Restrooms: There must be a sufficient number of restrooms for patients, their families and the staff, including access for disabled individuals. Nurse call buttons shall be available.
5.6. Examination rooms: There must be adequate examination rooms for patient care and, ideally, an area for examination of stretcher- and wheelchair-bound patients.
5.7. Simulation areas: There must be an area for simulation of patient treatment fields. This may be a separate simulation room or may be incorporated into other areas in the facility.
5.8. Treatment Planning/Physics/Dosimetry areas: There must be adequate space for Treatment Planning, Physics and Dosimetry functions performed or reviewed on site.
5.9. Megavoltage treatment room(s): There must be an appropriately shielded area for each megavoltage treatment unit in use. These areas must meet all applicable, state and/or federal requirements. Each treatment room must be equipped with door interlocks, radiation monitors, video observation equipment and voice communication equipment. Documentation of the radiation safety survey of the treatment room must be available for review.
5.10. Treatment aide fabrication areas: There must be areas for fabrication of treatment aides for the practice. These areas may be in separate rooms or incorporated into other areas within the facility. When utilizing potentially hazardous materials, appropriate facilities must be available and utilized.
5.11. Offices: There must be sufficient office space for physicians, physicists and other supervisory personnel to carry out their functions.
5.12. Other areas: In addition to the above areas, the practice facility must have space for storage, a break room (lounge) for staff, and space for other needs of the practice.
5.13. The practice shall demonstrate compliance with the applicable rules of the Americans with Disabilities Act (ADA), the Health Insurance Portability and Accountability Act of 1996 (HIPAA), Occupational Safety and Health Administration (OSHA) and local fire codes.

6. Radiation Therapy Personnel: The process of radiation therapy consists of a series of steps and often involves a number of different individuals. Each practice shall establish a staffing program consistent with patient care, administrative, research and other responsibilities. It is recognized that talent, training and work preferences may vary from individual to individual. It is appropriate to factor these aspects into the staffing program. General staffing requirements and recommendations are outlined below. Personnel involved in the radiation oncology process are:

6.1. **Radiation oncologist:** A Radiation Oncologist must have (1) satisfactorily completed a radiation oncology residency in an ACGME (American Council of Graduate Medical Education) approved program, and (2) be board certified (or eligible) in radiation oncology or therapeutic radiology by the American Board of Radiology, the American Osteopathic Board of Radiology, or the Royal College of Physicians and Surgeons of Canada.

6.1.1. A full-time Radiation Oncologist must be able to manage approximately 30 patients per day under treatment. Considering consultations, on treatment visits, simulation and follow-up visits, this translates to approximately 60 to 90 patient encounters per week and allows sufficient time for treatment planning, record keeping and other clinical physician functions. As noted above, the number of Radiation Oncologists available for a practice must be consistent with patient care, administration, research and other responsibilities.

6.1.2. A radiation oncologist shall be available for direct care and quality review and should be on the premises whenever radiation treatments are being delivered. The radiation oncologist, facility and support staff shall be available to initiate urgent treatment within a medically appropriate response time on a 24-hour basis or refer to a facility that is available to treat on a 24-hour basis. When unavailable, the radiation oncologist is responsible for arranging appropriate coverage. A radiation oncologist's availability must be consistent with state and federal requirements.

6.2. **Medical physicist:** A Medical Physicist must be (1) board certified in the appropriate medical physics subfield and must be (2) licensed in those states where licensure exists. The following board certifications meet criterion (1) above: the American Board of Medical Physics, the American Board of Radiology, and the Canadian College of Physicists in Medicine.

Authority to perform specific clinical physics duties must be established by the Radiation Oncology Physicist for each member of the physics staff in accordance with individual competencies. The Radiation Oncologist must be informed of the clinical activities authorized for each member of the staff.

6.2.1. In general, there must be at least one FTE Radiation Oncology Physicist per 200-300 new patients per year for general radiation oncology care. If the practice is engaged in a large proportion of higher-complexity care, more Radiation Oncology Physicists may be required.

6.3. **Medical dosimetrist:** A Medical Dosimetrist must be certified by the Medical Dosimetrist Certification Board.

Medical dosimetry functions may be carried out by a Medical Dosimetrist, as defined above under the supervision of a Radiation Oncologist, and/or Medical Physicist. Alternatively, medical dosimetry functions may be carried out by a Medical Physicist. In either case, the Medical physicist must oversee the medical dosimetry functions of the practice, function as a technical supervisor of medical dosimetry services and oversee medical dosimetry quality assurance activities. A practice shall demonstrate its access to a sufficient number of Medical Dosimetrists, Medical Physicists and/or other individuals as noted above to fulfill the dosimetry requirements for the patient population under treatment.

6.3.1. In general, there should be at least one FTE dosimetry person per 300-350 new patients per year for general radiation oncology care. If the practice is engaged in a large proportion of higher-complexity care, more dosimetry personnel may be required. If dosimetry services are performed off-site, the practice must provide documentation that these services are performed by qualified individuals.

Staffing Per Number of New Patients Annually, 8 hours per day, five days per week.

Radiation Oncologists	1 per 200 - 300
Physician Extenders (PAs or NPs)	As needed
Medical Physicists	1 per 200 -300 (25% IMRT)
Dosimetrists	1 per 300 -350 (25% IMRT)
Nursing Support (RN, LVN or MA)	1 per 200 - 300
Radiation Therapists	Minimum of 2 therapists on each machine at all times
Simulation RT(T) or RT(R)	As needed
Brachytherapy Staff	As needed
Practice Administrator	As needed
Clerical Staff	At least 1 per 200 patients
Treatment Aides	As needed
Maintenance/Service Staff	By contract or 1 per 3 – 4 megavoltage units, CT, PET/CT or MRI units
Dieticians	As needed
Physical/Rehabilitation Therapists	As needed
Social Workers	As needed
Patient Navigators	As needed

6.4. **Radiation therapist [RT(T)]:** All Radiation Therapist(s) must have American Registry of Radiologic Technology (ARRT) certification in Radiation Therapy and must fulfill state licensing requirements, if they exist.

6.4.1. Two credentialed radiation therapists must be available on each treatment unit at all times for treatment delivery to ensure optimal quality of care, and to allow for vacations, meetings and absences. Additional RT(T)s per treatment unit may be required if there are longer than standard work hours or larger than average patient load for the treatment unit and to allow for vacations, meetings and absences.

6.5. **Radiation therapy support staff:** Included in these personnel are Radiology Technologists and Treatment Aides. Individuals involved in the treatment of patients must have training and experience in the care of radiation therapy patients as well as in radiation safety and certain aspects of emergency care of patients under treatment. They must work under the supervision of the Radiation Oncologist, Medical Physicist, and Radiation Therapist(s).

6.6. **Simulation staff:** Simulation Therapists or Technologists must have American Registry of Radiologic Technology (ARRT) certification in Radiation Therapy R.T.(T) or Radiography R.T.(R) and must fulfill state licensing requirements, if they exist. If applicable, cross competency training in CT, PET or MRI is recommended.

6.7. **Patient support staff:** Included in these personnel are Nurses, Physician Assistants, Nurse Practitioners, Clinical Aides, and Medical Assistants. Individuals involved in the nursing care of patients must have training and experience in the care of radiation therapy patients. Certification as an Oncology Nurse (OCN), Advanced Oncology Nurse (AOCN), or Pediatric Oncology Nurse (POCN) is desirable.

6.8. **Clerical staff:** The practice shall demonstrate a sufficient number and type of Clerical Staff sufficient for the needs of the practice.

7. Radiation Therapy Equipment: Various types of radiation therapy equipment are used in daily practice. The descriptions that follow are meant to serve as a general overview only.

7.1. Megavoltage radiation therapy equipment for external beam therapy (e.g., linear accelerator or other devices capable of producing Megavoltage energy). Modern practice does not support the use of Cobalt 60 units for definitive patient care, but if a practice does have such a unit to support its palliative care mission, the machine must have a treatment distance of 80 cm or more with the exception of cranial stereotactic radiosurgery.

7.2. Electron beam(s) with multiple energy levels and/or X-ray equipment suitable for treatment of superficial (e.g. skin) lesions, or access to such equipment. Other techniques (such as brachytherapy) may be employed for superficial lesions.

7.3. CT simulation must be available on site either through a treatment planning system or as a stand alone system. CT studies can be done onsite or offsite. A dedicated simulator capable of duplicating the treatment setups of the megavoltage unit(s) and capable of producing images representative of the radiotherapy fields to be employed is not standard of care any longer and is not required. Fluoroscopic simulation capability is desirable. MRI treatment planning for intracranial lesions is also desirable.

7.4. Brachytherapy equipment for intracavitary and/or interstitial treatment, or formal arrangements for referral to facilities with appropriate capabilities for such treatment.

7.5. Computer dosimetry equipment capable of calculating and displaying external beam isodose distributions as well as brachytherapy isodose curves. Three-dimensional (3-D) conformal dosimetry capability, when beneficial to the patient, is recommended for conventional radiation therapy. Inverse planning capability is necessary for intensity modulated radiation therapy.

7.6. Physics calibration devices for all treatment units.

7.7. Treatment aids such as beam shaping devices, beam modifying devices, immobilization devices and other treatment aids as deemed appropriate by the Practice. Regular maintenance and repair of equipment is mandatory.

7.8. Record and Verify system for all radiation treatment delivery systems is required.

8. Radiation Therapy Physics: The following areas provide the basis for assessment of the physics program.

8.1. **Radiation safety program:** The practice shall have a written Radiation Safety Program incorporating the elements described in the following subsections:

8.1.1 **Radiation room surveys:** The practice shall have documentation of radiation exposure shielding calculations, surveys and licensure from the appropriate regulatory agency for operation. The radiation survey needs to address IMRT and any special procedures that affect the shielding parameters. The radiation survey needs to address neutrons for x-rays beams energies higher than 10 MV.

8.1.2. **Radiologic equipment licensure/registration:** The practice shall have documentation of licensure/registration for all radiotherapeutic or radiologic equipment used for therapeutic purposes.

8.1.2.1. Linear accelerator licensure or registration.

8.1.2.2. Other external beam or radiographic equipment licensure or registration.

8.1.2.3. Individuals authorized to use the equipment.

8.1.3. **Brachytherapy licensure/registration:** The practice shall have documentation of licensure/registration for all radioisotopes used for therapeutic or calibration purposes.

8.1.3.1. Radioisotope licensure.

8.1.3.2. Individuals authorized to use the brachytherapy equipment.

8.1.4. **Radiation exposure monitoring program:** The practice shall have a radiation exposure monitoring program, as required by the Nuclear Regulatory Commission (NRC) and/or the appropriate state regulatory agencies. The personnel radiation exposure has to be reviewed by the appropriate supervisor, who signs the exposure records. The radiation exposure report must be available for review by all personnel.

8.1.5. **Major equipment operating procedures:** The practice shall have documentation of major equipment operating procedures. The following documents must be available on site or posted as required:

8.1.5.1. Operating procedures for all major equipment.
8.1.5.2. Procedures for preventive maintenance and repair.
8.1.5.3. Emergency procedures.
8.1.5.4. Radiation safety procedures.

8.1.6. **Major equipment records:** The practice shall have documentation of the following:

8.1.6.1. Initial acceptance testing and commissioning documents.
8.1.6.2. Calibration records.
8.1.6.3. Maintenance records including preventive maintenance and repairs. The record is reviewed by physicist after repair and signed by physicist to relaease for clinical use.
8.1.6.4. Machine fault log book. The log book is reviewed by the physicist and signed and dated to document review.

8.1.7. **Radiation safety and quality assurance procedures:** The practice shall have radiation safety and quality assurance procedures, when applicable, for all radiotherapeutic or radiologic equipment. The QA program includes:

8.1.7.1. Morning QA procedures for all radiotherapeutic or radio-logic equipment based on AAPM Task Groups and/or AAPM MPPG protocols.
8.1.7.2. Monthly QA procedures for all radiotherapeutic or radiologic equipment. Appropriate AAPM Task Group and/or MPPG protocols to be followed for these procedures.
8.1.7.3. Annual calibration for all radiotherapeutic equipment. Appropriate AAPM Task Group and/or MPPG protocols to be followed for these procedures.
8.1.7.4. All QA forms need to have proper serial number and valid calibration dates of the equipment. The forms are signed and dated by the medical physicist on record.
8.1.7.5. Independent check of the linac output for all energies photon and all electron energies to be done annually. For example, IROC Houston Quality Center, Radiation Dosimetry Services or University of Wisconsin Calibration Laboratory.
8.1.7.6. Treatment machine override privileges shall be limited.
8.1.7.7. A process shall be in place to record and track near misses, and review the effectiveness of processes and policies in the continuum of care for optimizing a safer patient care environment. Action plans shall be developed to prevent re-occurrences.

The practice must document that the annual calibration or the therapeutic external beams is performed in accordance with AAPM TG-51 and TG-40 protocol guidelines or their equivalents. TG-142, TG-148, TG-66 and corresponding MPPG must be used as a guide by the authorized physicist in establishing a quality assurance program.

8.2. **Dosimetry reference:** The practice must demonstrate a dosimetry reference for physics calibration purposes.

8.2.1. **Physics calibration equipment:** The practice must show access to adequate physics calibration equipment including:

8.2.1.1. Ionization chambers appropriate for the equipment and procedures within the Practice.
8.2.1.2. Appropriate equipment for in-vivo dosimetry (e.g., diodes, TLDs, films, etc.) for clinical use.
8.2.1.3. Tissue equivalent buildup material.
8.2.1.4. Water phantom with beam scanning equipment.
8.2.1.5. Documentation of other physics equipment and uses.
8.2.1.6. Biennial calibration of electrometer and ionization chamber by an ADCL. A second ionization chamber is highly recommended as a field instrument.
8.2.1.7. Annual intercomparison of ionization chambers, electrometers, barometers and thermometers are required. If only one set of electrometer and ionization chamber is available, an intercomparison with equipment from another facility is recommended. A calibrated glass thermometers instead of a digital calibrated thermometer is highly recommended as a standard. Barometers can be compared with local airport barometric pressure which is available at sea level and needs to be corrected for altitude.

8.3. **Treatment planning:** The practice needs to demonstrate the following:

8.3.1. Access to a computerized treatment planning system, on site or remote.
8.3.2. Records of system commissioning, acceptance testing and beam data.
8.3.3. QA program including daily (if available), weekly (if necessary), monthly and annual procedures.
8.3.4 Heterogeneity corrections to be applied to all plans.

8.4. **Record and verify systems:** The practice needs to have a Record and verify system and demonstrate the following when applicable:

8.4.1. Records of acceptance testing and commissioning of the record and verify system.
8.4.2. Backup records, either computerized or hard copy.
8.4.3. Computer system security.
8.4.4. Program of ongoing data accuracy monitoring.

8.5. **Treatment quality assurance:** The practice needs to demonstrate the following:

8.5.1. Weekly physics checks including verification and quality assurance of prescription, administered dose, review of patient treatment documentation and assessment of treatment parameters including treatment overrides.
8.5.2. Second monitor unit (MU) check done before treatment, including method.
8.5.3. Port film(s) or image(s) checked within 24 hours.
8.5.4. Physics checks of computerized dosimetry treatment plans before treatment.
8.5.5. Physics checks of record and verify entries before treatment. Physics approval for the record and verify entries.
8.5.6. Check of valid in-vivo dosimetry measurements for concordance with calculated values (e.g., external diode or TLD measurement) for non IMRT cases in the first or second fraction. Discrepancy between measured and calculated is ±5%.
8.5.7. Rechecks for any revision(s) in treatment parameters (i.e., field, energy, treatment distance, field shape, etc.), prior to treatment. No changes allowed in the Record and Verify System once the R&V parameters are verified by

physicist. Any changes in the plan requires new plan and new checks, except for change in the number of fractions.

8.5.8. Check of appropriate use of treatment aides as prescribed, prior to treatment.

8.5.9. Final physics check to be done within a week of end of treatment.

8.6. **Brachytherapy procedures:** The practice shall demonstrate the following when applicable:

8.6.1. Quality assurance program for brachytherapy procedures.

8.6.2. Security in storage of available radioisotopes used for therapeutic purposes or calibration.

8.6.3. Appropriate safety equipment for the use of sealed (and unsealed, as the case may be) radiation sources.

8.6.4. Incoming/outgoing package surveys/wipe tests completed and recorded according to recommended policies of respective regulatory bodies.

8.6.5. Quarterly inventory of all radioisotope sources.

8.6.6. Semi-annual wipe-tests of stored sealed radioisotopes used for therapeutic purposes.

8.6.7. Completed documentation of measurement tests and safety procedures for source exchange for high-dose-rate (HDR) units. All documentation needs to have serial number and date of valid calibration. All documentation are signed and dated by the medical physicist on record.

8.6.8. Availability of policy and procedure for calibration method for HDR source, and quality management program (QMP) for brachytherapy practice.

8.6.9. Quality assurance program for HDR unit and treatment.

8.6.10. Emergency procedures for HDR unit.

8.6.11. Record of brachytherapy procedures.

8.6.12. Procedures for use and safe handling of other unsealed radioisotopes such as 131 I, 153 Sm, 89 Sr, etc.

8.6.13. Method of exposure monitoring and records.

8.6.14. License application procedures and/or Department of Transportation rules (Title 49 CFR).

8.6.15. Availability of procedural menus for all radioisotope assays in accordance with recognized standards such as AAPM TG-43 and/or corresponding AAPM MPPG.

8.6.16. Documentation of appropriate training shall be maintained when required as a shipper of radioactive materials per 49 CFR 172, subpart H. Training records are signed and dated by the trainee and the trainer. The content of the training is also documented.

8.7. **Posting and availability of information:** The practice must demonstrate appropriate visible posting or availability of the following in an easily readable and accessible method:

8.7.1. Radiation safety officer and other contacts in case of a radiation-related emergency.

8.7.2. Any state or other regulatory agency signage such as "Notice to Employees".

8.7.3. Personnel radiation exposure readings are available upon request to the radiation safety officer or their designee.

8.7.4. Emergency Shut Down Procedures posted

8.7.5. Safe Operating Procedures posted

8.7.6. Notice Card or equivalent is posted, ref: 10CFR part 19

8.7.7. Other postings as required by the federal or state in which the facility under review resides.

8.7.8. Posting signs for radiation exposure to pregnant or possibly pregnant women shall be located throughout the radiation oncology department. Signage for, "If you are pregnant, or think you may be pregnant, please notify the radiation therapist or physician", shall be posted by the entrance to the CT Simulator suite and each Linac treatment room.

8.8. **Intensity modulated radiation therapy (IMRT):** IMRT may be performed by a variety of methods that yield similar results. The practice shall demonstrate the following when applicable:

8.8.1. Documentation of the radiation exposure shielding surveys taking into account the increased monitor units (MUs)/dose and neutrons for >10 MV energies associated with IMRT, surveys and licensure from the appropriate regulatory agency for operation.

8.8.2. Quality assurance program for IMRT procedures including stringent quantitative multi-leaf collimator (MLC) position tests as recommended by the AAPM TG142 report and/or corresponding AAPM MPPG.

8.8.3. Access to a computerized treatment planning system, on site or remote.

8.8.4. Records of treatment planning system commissioning, acceptance testing and beam data for IMRT.

8.8.5. Weekly physics checks including verification and quality assurance of prescription, administered dose, review of patient treatment documentation and assessment of treatment parameters including treatment overrides.

8.8.6. Second monitor unit (MU) check done before treatment, including method.

8.8.7. Verification daily of the isocenter using IGRT techniques.

8.8.8. Physicist checks of computerized dosimetry treatment plans, prior to treatment.

8.8.9. Physicist checks of record and verify entries, prior to treatment.

8.8.10. Rechecks for any revision(s) in treatment parameters, prior to treatment. Any variation on the plan with exception of the number of fractions needs another plan and physics checks prior to treatment.

8.8.11. No change in the R&V treatment parameters allowed once it is approved by the physicist, with exception of number of fractions.

8.8.12 Use and check of more stringent immobilization devices as prescribed.

8.8.13. Patient-specific check of treatment plan including both absolute point dose measurement and relative fluence measurement before the first treatment Patient specific QA results to be evaluated using 3 mm DTA and 3% absolute dose for at least 95% of the points. The threshold can be changed up to 10%.

8.8.14. Annual End to End tests for IMRT procedures based on AAPM TG 119 and/or corresponding AAPM MPPG.

8.8.15. Patient specific QA results to be evaluated using 3mm DTA and 3% absolute dose for at least 95% of the points. The threshold can be changed up to 10%.

8.9. **Stereotactic radiosurgery (SRS) and stereotactic body radiotherapy (SBRT):** SRS and SBRT may be performed by a variety of methods, including:

8.9.1. Cobalt60-based
8.9.2. Linear-accelerator- based
8.9.3 Charged-particle based

The practice shall demonstrate the following when applicable:

8.9.4. Documentation of the radiation exposure shielding calculations taking into account SRS and SBRT, if applicable, the type of unit and other aspect of exposure. There shall be licensure or other approval from the appropriate regulatory agency for operation.
8.9.5. Policies and procedures for proper patient selection and treatment.
8.9.6. Quality Assurance program for:
8.9.6.1. Patient imaging to ensure the proper imaging technique is utilized and that the imaging spatial coordinates correspond to the spatial coordinates of the treatment planning system and treatment unit.
8.9.6.2. Treatment-planning system.
8.9.6.3. Beam alignment testing to assure the beam can be correctly aimed at the targeted tissues.
8.9.6.4. Proper calculation of radiation dose per unit time (or per monitor unit).
8.9.6.5. Collimation and field shaping systems.
8.9.6.6. Patient immobilization or tracking.
8.9.6.7. The practice has to have policies and procedures following AAPM TG 101.

8.10. **Image guided radiation therapy (IGRT):** A variety of imaging equipment is available for IGRT. The practice must demonstrate the following:

8.10.1. Appropriate acceptance testing and commissioning of the IGRT equipment and software.
8.10.2. Each practice must have in place policies and procedures for proper patient selection, imaging techniques, immobilization or tracking techniques and use of imaging results.
8.10.3. A Quality Assurance program for ongoing monitoring of the results and usage of IGRT. All QA programs have daily and/or weekly procedures if necessary. All QA programs must have monthly and annual procedures.

8.11. **Radioactive microsphere and immunoglobin therapy:** Radioactive microsphere and immunoglobin therapy may be administered with a number of products. The practice needs to demonstrate/document the following:

8.11.1. Licensure from the appropriate regulatory agency.
8.11.2. A written Policy and Procedure for calibration of the radioactive microsphere or immunoglobin product(s).
8.11.3. A written Policy and Procedure for patient selection for radioactive microsphere or immunoglobin therapy.
8.11.4. A written Policy and Procedure for utilization of the radioactive microsphere or immunoglobin therapy.
8.11.5. A written Quality Assurance program for the radioactive microsphere or immunoglobin therapy.
8.11.6. A written Radiation Safety Program for the radioactive microsphere or immunoglobin therapy.

9. Continuous Quality Improvement: The practice has to have a continuous quality improvement (CQI) plan. This may be combined with the radiation safety program. The following items must be included in a CQI program:

9.1. **Chart review:** Chart reviews shall be performed on a regular (weekly is recommended) basis to ensure ongoing quality management. A chart audit shall include review (and corrective action, if necessary) of the following:

9.1.1. Diagnosis.
9.1.2. Stage of disease.
9.1.3 Pertinent histopathologic report(s).
9.1.4. Pertinent history and physical examination performed by the responsible Radiation Oncologist.
9.1.5. Prescription signed and dated by responsible Radiation Oncologist prior to treatment.
9.1.6. Diagram(s) and/or photograph(s) of lesion(s).
9.1.7. Examination, operative and radiographic reports.
9.1.8. Documentation of informed consent to treatment. The informed consent is specific for special procedures.
9.1.9. Radiation treatment records.
9.1.10. Diagram(s) and/or photograph(s) of field(s).
9.1.11. Dosimetry calculations.
9.1.12. Graphic treatment plan (e.g. isodose distribution) signed and dated by a Radiation Oncologist.
9.1.13. Port image(s) documenting each treatment field.
9.1.14. Dose verification records done prior to treatment.
9.1.15. Documented periodic (at least weekly) examinations of patient, while under active treatment, by a Radiation Oncologist. Weekly visits completed by Physician Assistant and/or Nurse Practitioner may be acceptable as long as these activities are within their State scope of practice and in compliance with federal regulations.
9.1.16. Documentation that chart was checked at least weekly during the course of radiation treatment by a Medical Physicist and/or their designee.
9.1.17. Treatment summary (completion of therapy note).
9.1.18. Follow-up plan.
9.1.19. Chart review (Chart rounds) should have representatives from each discipline within the practice. Irrespective of practice setting, large community and academic practices; mid-level and smaller practices, a fully signed and dated attendance sheet must be in place for each weekly chart review/rounds completed.

9.2. **General practice review:** The CQI Plan has to establish a review processes for the following:

9.2.1. Physics Review. The practice has to have a process for review of regular physics quality reports.
9.2.2. Dose Discrepancy Analysis. The practice has to have a process for review of all cases in which there is found a variation of delivered dose from prescribed dose greater than 10% of the intended total dose. This review has to include any case in which mathematical dose corrections of 10% or more are made as a result of any dose verification or recalculation procedure.

9.2.3. Radiation Therapist Peer Review. The practice should have a process for a radiation therapist peer-to-peer review in addition to the therapist's pre- treatment and weekly chart check.

9.3. **New procedure review:** When any new treatment modality or technique is introduced to the practice the procedures, results, problems, complications, etc. shall be reviewed by the QA Committee in a timely fashion consistent with patient safety.

9.4. **Incident report review:** The practice shall regularly review all cases in which incident reports are filed and in which there are reports of accidents or injuries to patients.

9.5. **Morbidity and mortality review:** The Practice has to regularly review all cases in which any of the following occur:

9.5.1. Unusual early or late complications of radiation treatment.
9.5.2. Unplanned interruptions during the course of radiation treatment.
9.5.3. Severe early or late complications of radiation treatment.
9.5.4. Unexpected deaths.

9.6. **Outcome studies review:** The practice has to review pertinent outcome studies, including tumor control, survival and significant treatment-related sequelae, from the Cancer Committee, Tumor Registry or any other section, department or committee of an associated hospital or healthcare entity, if applicable.

9.7. **Standards-Based Practice:** The practice's standards-based philosophy provides a systematic approach to improve continuity and consistency of care through the following:

9.7.1. Radiation oncologist peer review: The practice should have a physician (Radiation Oncologist) peer review mechanism which reviews at least ten percent (10%) of all cases managed within a radiation oncology practice. Such peer review activities should occur no less frequently than annually. Additionally, ACRO Accreditation recognizes the importance of peer review and thus recommends that all cases should undergo prospective peer review. Therefore, prospective peer review is used as one of the scoring criteria for the Medical Chart Review (Section G).

9.8. **Record maintenance and data collection:** Appropriate patient records shall be kept in the radiation therapy practice or department, consistent with state and local requirements and/or by maintenance of a tumor registry. Each radiation therapy practice or department shall collect data permitting the compilation of an annual summary of activities.

10. Safety Program: The provision of a safe environment for patients, staff and the public is mandatory. The practice has to demonstrate that it provides safety measures including the following:

10.1. Safe entrance and exit from the facility consistent with the rules of the Americans with Disabilities Act (ADA).
10.2. A written Radiation Safety Program as described previously.
10.3. Annual review of the radiation safety program by the medical physicist or radiation safety officer.
10.4. Adherence to the rules of the Occupational Safety and Health Administration (OSHA).
10.5. Adherence to local fire codes, including clearly marked exits, fire extinguishers and the ability to contact the local fire department in the case of emergency.
10.6. Program(s) to prevent mechanical injury caused by the radiotherapy machine(s) and/or accessory equipment shall be in place.
10.7. Annual radiation safety in-service training review in the basic radiation safety instructions, state regulations, patient safety, reporting of errors and medical events and related safety issues is required.
10.8. Time Out: Time Out shall be an intentional pause, occurring immediately before radiation therapy procedures, to optimize patient safety and quality as part of the workflow to review and confirm: patient identification, consent(s), patient-specific simulation orders, patient-specific treatment planning, and correct patient-specific treatment procedure per physician's documented prescription. Details of the Time Out shall be dictated and/or documented in each patient's medical chart. If using a checklist, all boxes in the checklist must be completed. Signatures and/or initials of at minimum two credentialed members of the time out team must be noted and reflect the date and time of the time out. EMR charting of external beam radiation treatments allows for real-time documentation and review of the timeout process. Practices using manual charting shall implement a checklist form for each treatment field and each fraction number; checklist form shall be complete and include the date, initials of at minimum two credentialed radiation therapists along with time documented for the timeout.

11. Education Program: Continuing medical education (CME) programs are required for physicians, physicists, dosimetrists, nurses, and radiation therapy technology staff. This program has to include:

11.1. Access to information, as appropriate to each individual's responsibilities, pertinent to safe operation of all equipment within the practice.
11.2. Access to information pertinent to radiation treatment techniques, new developments in the field of radiation oncology and related medical care.
11.3. Adherence to local licensing agency requirements for CME.
11.4. Appropriate training and competency assessment for new devices and techniques.

E. Administrative Onsite Review

Information on the ACRO website will be reviewed by the administrative surveyor prior to and during the onsite review for completeness and verification of information provided by the facility. Components of the administrative review include, but are not limited to the examination of the following:

Chart review and documentation: A sampling of patient current records will be reviewed. Focus will be on the Consent, Time out completed and documented, Simulation, Treatment Delivery, Image Review, Treatment Verification and QA Practices for all services provided.

Patient care & safety: This aspect of the review will focus on safe and effective patient care, patient monitoring, effective communication, support services, clinical pathways. Policy & Procedure Manual/QA Manuals will be reviewed for practices in place and all services provided.

Environment of care: Includes buildings, equipment and people: There must be effective management of processes and activities for Safety, Security, Fire Safety, Medical Equipment and Provisions for a Safe and Functional Environment for patients, visitors and staff. The practice must have a documented emergency response and preparedness plan in place.

Staffing (therapist and nursing/medical assistant):

- ***Credentials, certifications and licensing*** - Must have current copies available for review for all staff/outside personnel performing services. Current CPR certification must also be available for review.
- ***Annual performance evaluation, competencies and trainings -*** Documentation of annual performance evaluation, annual mandatory competency assessments, trainings and in-services must be available for review. Documentation shall include sign off of staff evaluated, staff trained, content covered and dates of training.
- ***Staffing -*** The facility must have available enough qualified staff (therapist and nursing/medical assistant) to carry out required duties for hours of operation.

F. Physics Onsite Review

Information on the ACRO website will be reviewed by the physics surveyor prior to and during the onsite review for completeness and verification of information provided by the facility. Components of the physics review include, but are not limited to the examination of the following:

Chart review and documentation: A sampling of patient records will be reviewed. Focus will be on the Physics and QA Practices for all services provided.

Patient care & safety: This aspect of the review will focus on safe and effective patient care, patient monitoring, effective communication, support services, clinical pathways. Treatment variance reporting system will be assessed.

QA program and documentation: Includes all equipment and procedures. Policy & Procedure Manual/QA Manuals will be reviewed for practices in place and all services provided. CQI program, State/NRC inspections, registrations, licenses and their documentation will be reviewed

Staffing (physics and dosimetry):

- ***Credentials, certifications and licensing*** - Must have current copies available for review for all staff/outside personnel performing services.
- ***Competencies and trainings*** - Documentation of annual mandatory competency assessments, trainings and in-services must be available for review. Documentation shall include sign off of staff trained, content covered and dates of training.
- ***Staffing*** - The facility must have available enough qualified staff (physics and dosimetry) to carry out required duties for hours of operation

G. Medical Case Review

1. Overview and Clinical Guidelines: ACRO has not created its own clinical guidelines to be used for ACRO Accreditation. Consequently, ACRO Accreditation has chosen to base its assessment of the quality of clinical care on the guidelines published by the National Comprehensive Cancer Network (NCCN). These guidelines are well accepted as describing contemporary standards of care. NCCN is an alliance of twenty-one cancer centers in the United States, most of which are designated by the National Cancer Institute (NCI) of the National Institutes of Health (NIH) as comprehensive cancer centers.

NCCN guidelines are a statement of evidence and consensus of the authors regarding their views of currently accepted approaches to treatment. Any clinician seeking to apply or consult these guidelines is expected to use independent medical judgment in the context of individual clinical circumstances to determine any patient's care or treatment. The NCCN makes no representations or warranties of any kind regarding their content use or application and disclaims any responsibility for their application or use in any way. These guidelines are copyrighted by NCCN and can be viewed at http://www.nccn.org/clinical.asp.

2. Medical Chart Upload Checklist (General): see p17

3. Medical Chart Upload Checklists by Disease Site: see pp18-25

4. Disease Site Cancer Review Criteria: Medical case reviews are carried out online by the team of disease site reviewers reporting to the Disease Site Team Leaders. Cases are made available on rotation to disease specific physicians based on their own expertise and clinical interest. Each chart is graded online using a standard form, with scores for various aspects of the chart on a 0-5 scale. Each chart is scored on a 100-point basis, with a score of 75 considered the minimum. To pass this section, the average chart score must be 80 or above and no more than two charts can have a score below 75 or no more than one chart for an additional practice. If either of these standards is not met, a recommendation for provisional accreditation will be given for this section. If both of these standards are not met, then a recommendation of denied accreditation will be given.

The disease site rating sheets follow this discussion.

- Accelerated Partial Breast Irradiation (APBI) Chart Review
- Breast Cancer Chart Review
- Gastrointestinal Esophageal Cancer Chart Review
- Gastrointestinal Upper GI Cancer Chart Review
- Gastrointestinal Lower GI Cancer Chart Review
- Genitourinary/Prostate Brachtherapy Chart Review
- Genitourinary/Prostate Cancer Chart Review
- Gynecologic Cancer - Brachytherapy Chart Review
- Gynecologic Cancer Chart Review
- Head & Neck Cancer Chart Review
- Intraluminal Chest Brachtherapy Chart Review
- Lung Cancer Chart Review
- Lung Cancer SBRT Chart Review
- Lymphoma/Sarcoma Cancer Chart Review
- Neuro-Oncology Chart Review
- Palliative Cancer Chart Review

ACRO ACCREDITATION: Medical Chart Upload Checklist (General)

History & Physical

- ☐ Consultation Note
  - ☐ History
  - ☐ Physical Exam
  - ☐ Discussion of treatment options/ Rationale for treatment
- ☐ Additional pre-treatment follow up/re-evaluation notes (if applicable)
- ☐ Clinical Assessments - KPS, MMS, IPSS, …
- ☐ All relevant Labs
- ☐ All relevant diagnostic imaging reports
- ☐ All relevant diagnostic procedures reports
- ☐ Initial Biopsy Report
- ☐ Op Note (if applicable)
- ☐ Pathology Report (if applicable)
- ☐ TNM staging
- ☐ Hem Onc/Surg Onc Consult Notes (optional)

Simulation

- ☐ Consent form (signed)
- ☐ Clinical Treatment Planning Note/Treatment intent
- ☐ Simulation Directive
- ☐ Simulation Note and Documents
- ☐ Simulation Pictures
- ☐ Physician Orders and Directives

Treatment Planning

- ☐ Planning Directive (required only for IMRT)
- ☐ Treatment Prescription
- ☐ Treatment Plan
  - ☐ Relevent Structure Contoured
  - ☐ Isodose Distribution
  - ☐ Dose-Volume Histogram (DVH)
- ☐ Additional Treatment Plan(s)/DVH if reduced fields or boost used
- ☐ Composite isodose plan and composite DVH
- ☐ DRRs
- ☐ Plan QA/Second checks
- ☐ Physics Consult report (if applicable)

Treatment

- ☐ Daily dose log
- ☐ Documentation of Port Films and Approval by MD
- ☐ Documentation of IGRT and Approval by MD (if applicable)
- ☐ Documentation of weekly physics chart checks
- ☐ Weekly Treatment Management Note (On Treatment Review)
- ☐ Documentation of Prospective Peer Review

Summary

- ☐ Treatment Summary Note
- ☐ Follow-Up Notes

For Brachytherapy (also include the following):

Simulation

- ☐ Implant Procedure Note
- ☐ Simulation Directive
- ☐ Simulation Note and Documents
- ☐ Simulation Pictures
- ☐ Physican Orders and Directives

Treatment Planning

- ☐ Planning Directive
- ☐ Treatment Prescription
- ☐ Treatment Plan
  - ☐ Relevent Structure Contoured
  - ☐ Isodose Distribution
  - ☐ Dose-Volume Histogram (DVH)
- ☐ HDR pre-treatment report
- ☐ Plan QA/Second checks
- ☐ Physics Consult report (if applicable)

Treatment

- ☐ Imaging verifing implant postion
- ☐ HDR post-treatment report
- ☐ Treatment Delivery Note

Medical Chart Upload Checklists by Disease Site

BREAST

Breast (External Beam)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan and DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑

Breast Brachytherapy (APBI)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan and DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑
21. Brachytherapy Implant Procedure Note	❑
22. Brachytherapy Simulation Documents	❑
23. Brachytherapy Treatment Plan PDF	❑
24. Brachytherapy Implant position verification documentation	❑
25. Brachytherapy Physics QA and documents	❑
26. Brachytherapy HDR pre and post treatment reports	❑
27. Brachytherapy Treatment delivery note	❑

Breast (External Beam and Brachytherapy)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Information	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan and DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑
21. Brachytherapy Implant Procedure Note	❑
22. Brachytherapy Simulation Documents	❑
23. Brachytherapy Treatment Plan PDF	❑
24. Brachytherapy Implant position verification documentation	❑
25. Brachytherapy Physics QA and documents	❑
26. Brachytherapy HDR pre and post treatment reports	❑
27. Brachytherapy Treatment delivery note	❑

Medical Chart Upload Checklists by Disease Site

GASTROINTESTINAL

Gastrointestinal Esophageal (External Beam)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan and DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑

Gastrointestinal Esophageal (Brachy)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan and DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑
21. Brachytherapy Implant Procedure Note	❑
22. Brachytherapy Simulation Documents	❑
23. Brachytherapy Treatment Plan PDF	❑
24. Brachytherapy Implant position verification documentation	❑
25. Brachytherapy Physics QA and documents	❑
26. Brachytherapy HDR pre and post treatment reports	❑
27. Brachytherapy Treatment delivery note	❑

Gastrointestinal Upper (Hepatobiliary/Pancreas/Gastric)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan and DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑
21. Brachytherapy Implant Procedure Note	❑
22. Brachytherapy Simulation Documents	❑
23. Brachytherapy Treatment Plan PDF	❑
24. Brachytherapy Implant position verification documentation	❑
25. Brachytherapy Physics QA and documents	❑
26. Brachytherapy HDR pre and post treatment reports	❑
27. Brachytherapy Treatment delivery note	❑

Gastrointestinal Lower (Anal Canal/Rectum)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan and DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑
21. Brachytherapy Implant Procedure Note	❑
22. Brachytherapy Simulation Documents	❑
23. Brachytherapy Treatment Plan PDF	❑
24. Brachytherapy Implant position verification documentation	❑
25. Brachytherapy Physics QA and documents	❑
26. Brachytherapy HDR pre and post treatment reports	❑
27. Brachytherapy Treatment delivery note	❑

Medical Chart Upload Checklists by Disease Site

GENITOURINARY

Genitourinary/Prostate (External Beam)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan and DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑

Genitourinary/Prostate (Brachytherapy)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan and DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑
21. Brachytherapy Implant Procedure Not	❑
22. Brachytherapy Simulation Documents	❑
23. Brachytherapy Treatment Plan PDF	❑
24. Brachytherapy Implant position verification documentation	❑
25. Brachytherapy Physics QA and documents	❑
26. Brachytherapy HDR pre and post treatment reports	❑
27. Brachytherapy Treatment delivery note	❑

Genitourinary/Prostate (External Beam & Brachy)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan, DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑
21. Brachytherapy Implant Procedure Note	❑
22. Brachytherapy Simulation Documents	❑
23. Brachytherapy Treatment Plan PDF - upload all plans available	❑
24. Brachytherapy Implant position verification documentation	❑
25. Brachytherapy Physics QA and documents	❑
26. Brachytherapy HDR pre and post treatment reports	❑
27. Brachytherapy Treatment delivery note	❑

Medical Chart Upload Checklists by Disease Site

GYNECOLOGIC

Gynecologic (External Beam)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan and DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑

Gynecologic (Brachytherapy)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan and DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑
21. Brachytherapy Implant Procedure Not	❑
22. Brachytherapy Simulation Documents	❑
23. Brachytherapy Treatment Plan PDF	❑
24. Brachytherapy Implant position verification documentation	❑
25. Brachytherapy Physics QA and documents	❑
26. Brachytherapy HDR pre and post treatment reports	❑
27. Brachytherapy Treatment delivery note	❑

Gynecologic (External Beam & Brachy)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan, DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑
21. Brachytherapy Implant Procedure Note	❑
22. Brachytherapy Simulation Documents	❑
23. Brachytherapy Treatment Plan PDF - upload all plans available	❑
24. Brachytherapy Implant position verification documentation	❑
25. Brachytherapy Physics QA and documents	❑
26. Brachytherapy HDR pre and post treatment reports	❑
27. Brachytherapy Treatment delivery note	❑

Medical Chart Upload Checklists by Disease Site

HEAD AND NECK

Head & Neck (External Beam)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan and DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑

Head & Neck (Brachytherapy)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan and DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑
21. Brachytherapy Implant Procedure Not	❑
22. Brachytherapy Simulation Documents	❑
23. Brachytherapy Treatment Plan PDF	❑
24. Brachytherapy Implant position verification documentation	❑
25. Brachytherapy Physics QA and documents	❑
26. Brachytherapy HDR pre and post treatment reports	❑
27. Brachytherapy Treatment delivery note	❑

Head & Neck (External Beam & Brachy)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan, DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑
21. Brachytherapy Implant Procedure Note	❑
22. Brachytherapy Simulation Documents	❑
23. Brachytherapy Treatment Plan PDF - upload all plans available	❑
24. Brachytherapy Implant position verification documentation	❑
25. Brachytherapy Physics QA and documents	❑
26. Brachytherapy HDR pre and post treatment reports	❑
27. Brachytherapy Treatment delivery note	❑

Medical Chart Upload Checklists by Disease Site

LUNG

Gastrointestinal Esophageal (External Beam)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan and DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑

Lung (Brachytherapy)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan and DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑
21. Brachytherapy Implant Procedure Note	❑
22. Brachytherapy Simulation Documents	❑
23. Brachytherapy Treatment Plan PDF	❑
24. Brachytherapy Implant position verification documentation	❑
25. Brachytherapy Physics QA and documents	❑
26. Brachytherapy HDR pre and post treatment reports	❑
27. Brachytherapy Treatment delivery note	❑

Lung (External Beam & Brachy)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan and DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑
21. Brachytherapy Implant Procedure Note	❑
22. Brachytherapy Simulation Documents	❑
23. Brachytherapy Treatment Plan PDF	❑
24. Brachytherapy Implant position verification documentation	❑
25. Brachytherapy Physics QA and documents	❑
26. Brachytherapy HDR pre and post treatment reports	❑
27. Brachytherapy Treatment delivery note	❑

Lung (SBRT)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan and DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑

Medical Chart Upload Checklists by Disease Site

LYMPHOMA/SARCOMA

Lymphoma/Sarcoma (External Beam)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan and DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑

Lymphoma/Sarcoma (Brachytherapy)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan and DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑
21. Brachytherapy Implant Procedure Not	❑
22. Brachytherapy Simulation Documents	❑
23. Brachytherapy Treatment Plan PDF	❑
24. Brachytherapy Implant position verification documentation	❑
25. Brachytherapy Physics QA and documents	❑
26. Brachytherapy HDR pre and post treatment reports	❑
27. Brachytherapy Treatment delivery note	❑

Lymphoma/Sarcoma (External Beam & Brachy)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan, DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑
21. Brachytherapy Implant Procedure Note	❑
22. Brachytherapy Simulation Documents	❑
23. Brachytherapy Treatment Plan PDF - upload all plans available	❑
24. Brachytherapy Implant position verification documentation	❑
25. Brachytherapy Physics QA and documents	❑
26. Brachytherapy HDR pre and post treatment reports	❑
27. Brachytherapy Treatment delivery note	❑

Medical Chart Upload Checklists by Disease Site

NEURO-ONCOLOGY

Neuro-Oncology (External Beam)

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan and DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑

PALLIATIVE CANCER

Palliative Cancer

1. Consult Note and TNM staging	❑
2. Pathology	❑
3. Imaging Reports and Surgical Notes	❑
4. Referring Notes	❑
5. Consent Form	❑
6. Clinical Treatment Plan Note	❑
7. Simulation Documents - Directive, Note, Documents, and Pictures	❑
8. Physician Orders and Planning Directives	❑
9. Treatment Prescription	❑
10. Treatment Plan PDF - including isodose plan and DVH, reduced fields & composite plans	❑
11. DRRs	❑
12. Other Treatment plan or procedure documents/notes	❑
13. QA and weekly physics checks	❑
14. Daily dose log	❑
15. Port Film/IGRT documentation	❑
16. On Treatment Review Notes	❑
17. Peer Review Documentation	❑
18. End of Treatment Note	❑
19. Follow up Notes	❑
20. Other/Additional documentation	❑
21. Brachytherapy Implant Procedure Not	❑
22. Brachytherapy Simulation Documents	❑
23. Brachytherapy Treatment Plan PDF	❑
24. Brachytherapy Implant position verification documentation	❑
25. Brachytherapy Physics QA and documents	❑
26. Brachytherapy HDR pre and post treatment reports	❑
27. Brachytherapy Treatment delivery note	❑

ACCELERATED PARTIAL BREAST IRRADIATION (APBI) USING BRACHYTHERAPY CHART REVIEW (page 1)

	Review Criteria	APBI	Points
H & P	Relevant history	Patient presentation evaluation, Breast symptoms, Systemic symptoms, PMH/medical co-morbidities, Family history: breast cancer or other malignancy, Risk factors: Gyn history/hormone use, SH: smoking, alcohol use.	/5
	Relevant physical findings and Appropriate diagnostic imaging	Breast examination; LN examination, Mammogram documented, Ultrasound, Breast MRI, CT chest, abdomen, pelvis, bone scan, PET scan as appropriate.	/5
	Pathology and surgery reports	Pathology report(s) present and including: histology, size, grade, ER-PR status, Her-2-Neu status, margin status, LN status, LVI, extracapsular extension: Initial biopsy pathology; Surgical pathology; Re-excision pathology (if applicable). Surgical report(s) present	/5
	Staging	TNM Stage documented and appropriate	/5
	Patient selection for treatment and Discussion of treatment and options	Appropriate candidate for breast conserving surgery. Appropriate APBI candidate (ASTRO, ABS, or ASBS guidelines). Appropriate candidate for radiation therapy (No contra-indications). Alternative treatment options discussed. Informed consent discussion documented.	/5
SIMULATION	Consent forms	Consent form signed and dated by patient and physician. Consent specific to region of treatment with side effects listed. Side Effects: Fatigue; Acute skin reaction; Infection risk; Late skin and soft tissue affects; Rib fractures; Persistent seroma; Late cosmetic affects	/5
	Treatment plan note	Treatment planning note present and defining: Treatment intent (curative vs. palliative); Target volumes; Method of treatment	/5
	Catheter/implant placement procedure note	Procedure note present and signed including: Type and method of catheter placement; Number of catheters (multicatheter brachytherapy only); Balloon fill volume (balloon brachytherapy only); Analgesia/anesthesia used	/5
	Simulation note/process	CT simulation with 3D Planning; Set up and patient position documented; Appropriate immobilization used; Catheter/implant position and orientation documented; Appropriate balloon fill volume.	/5
TREATMENT PLANNING	Treatment prescription	Brachytherapy: 34.0Gy in 10 fractions Bid over 5 treatment days using HDR Ir-192 source. At least 6 hours between fractions.	/5
	Treatment technique	Appropriate APBI technique utilized Interstitial Multi-catheter brachytherapy (IMB): Appropriate catheter placement with even spacing using single plane or volumetric implant to encompasses the CTV (TB with 1-1.5cm margin) Intracavitary Balloon-catheter Brachytherapy (IBB): ***(MammoSite, MammoSite ML, Contura, SAVI, BEST, Xoft)*** Dose shall be prescribed to 1cm depth from surface of balloon (CTV). The physical geometry of the balloon device shall not deviate > 2 mm of the expected dimensions. Trapped fluid or air at the balloon surface needs to be minimized and shall not exceed 10% volume of the CTV. Balloon fill volume shall be appropriate for applicator size. Appropriate APBI technique	/5
	Contouring/Target Volumes	Volumes contoured and appropriately defined Target: Tumor bed CTV = 1-1.5cm margin on tumor bed limited by chest wall and 0.5cm from skin surface. Normal tissues: Skin and Chest Wall.	/5
	Appropriate dose constraints	Appropriate Dosimetry: For all APBI cases: Target Coverage: ≥ 90% of the prescribed dose covering ≥ 90% of the CTV/PTV is acceptable, ≥ 95% of the prescribed dose covering ≥ 95% of the CTV/PTV is preferred. IMB: V150 ≤ 70 cc; V200 ≤ 20 cc; DHI (1 – V150/V100) ≥ 0.75 IBB: Balloon surface-skin distance ≥ 7 mm. Balloon surface-skin distance 7 mm may be acceptable if Max skin point dose is ≤ 145% of prescription dose. Max skin point dose ≤ 125% preferred but ≤ 145% is acceptable. V150 ≤ 50 cc. V200 ≤ 10 cc. Strut-based breast brachytherapy: Max skin point dose is ≤ 125% of prescription dose. point dose ≤ 100% preferred but ≤ 125% is acceptable. V150 ≤ 50 cc. V200 ≤ 20 cc.	/5
	Treatment plan documentation & Dosimetry	Treatment plan documentation: Plan signed and dated by physician; Isodose plan present; DVH Present including CTV and normal tissues	/5
TREATMENT	Treatment verification	Proper catheter position verification documented IMB: Proper catheter position based on clinical or imaging evaluation shall be documented for each fraction. IBB: Imaging prior to each fraction to ensure proper balloon inflation and catheter position. This can be performed with US, X-Ray, OBI, or CT. HDR treatment parameters confirmed prior to treatment. Basic dose calculation performed and documented prior to each HDR treatment fraction Appropriate documentation of treatment delivery upon completion	/5
	On-treatment review, physics chart check, & daily dose log	Weekly on treatment visit documented. Daily dose log documented. Physics chart review documented.	/5
	Chart rounds/peer review	Prospective case peer review documented.	/5

ACCELERATED PARTIAL BREAST IRRADIATION (APBI) USING BRACHYTHERAPY CHART REVIEW (page 2)

	Review Criteria	APBI	Points
SUMMARY	Treatment summary	Treatment summary present including: Site(s) treated; Technique; Radiation energy or source; Dose; Dose per fraction; Number of fractions; Dates treated and elapse days; Summary of treatment tolerance or acute side effect	/5
	Follow-up plan	Follow up plan appropriate and documented; Follow up notes present	/5
	Overall Appropriateness of Care		/5

BREAST CANCER CHART REVIEW (page 1)

	Review Criteria	Breast Conserving Therapy	Post-Mastectomy	Points
H & P	Relevant history	Patient presentation and evaluation, Breast symptoms, Systemic symptoms, PMH/medical co-morbidities, Family history: breast cancer or other malignancy, Risk factors: Gyn history/hormone use, SH: smoking, alcohol use.	Patient presentation and evaluation, Breast symptoms, Systemic symptoms, PMH/medical co-morbidities, Family history: breast cancer or other malignancy, Risk factors: Gyn history/hormone use, SH: smoking, alcohol use.	/5
	Relevant physical findings & Appropriate diagnostic imaging	Breast examination; LN examination; Mammogram documented; Ultrasound, Breast MRI, CT chest, abdomen, pelvis, bone scan, PET scan as appropriate.	Chest wall/breast examination; LN examination; Mammogram documented; Ultrasound, Breast MRI, CT chest, abdomen, pelvis, bone scan, PET scan as appropriate.	/5
	Pathology & surgery reports	Pathology report(s) present and including: histology, size, grade, ER-PR status, Her-2-Neu status, margin status, LN status, LVI, extracapsular extension. Initial biopsy pathology, Surgical pathology, Re-excision pathology (if applicable). Surgical report(s) present.	Pathology report(s) present and including: histology, size, grade, ER-PR status, Her-2-Neu status, margin status, LN status, LVI, extracapsular extension. Initial biopsy pathology, Surgical pathology, Re-excision pathology (if applicable). Surgical report(s) present.	/5
	Staging	TNM Stage documented and appropriate.	TNM Stage documented and appropriate.	/5
	Patient selection for treatment & Discussion of treatment and options	Appropriate candidate for breast conserving surgery; Appropriate APBI candidate (if applicable) (ASTRO, ABS, or ASBS guidelines); Appropriate candidate for radiation therapy (No contra-indications); Alternative options discussed: Mastectomy, Endocrine therapy only (>70yo, Stage I, ER+), Observation (DCIS). Informed consent discussion documented.	Appropriate indications for post-mastectomy radiation therapy; Appropriate candidate for radiation therapy (No contra-indications); Alternative options discussed; Informed consent discussion documented.	/5
SIMULATION	Consent form	Consent form signed and dated by patient and physician; Consent specific to region of treatment with side effects listed: Fatigue, Acute skin reaction, Late skin/soft tissue affects, Late cosmetic affects, Pneumonitis/pulmonary fibrosis, Cardiac affects (Left sided only), Brachial plexopathy (SC field), Lymphedema (Axillary XRT).	Consent form signed and dated by patient and physician; Consent specific to region of treatment with side effects listed: Fatigue, Acute skin reaction, Late skin/soft tissue affects, Late cosmetic affects, Pneumonitis/pulmonary fibrosis, Cardiac affects (Left sided only), Brachial plexopathy (SC field), Lymphedema (Axillary XRT).	/5
	Treatment plan note	Treatment planning note present and defining: Treatment intent (curative vs. palliative); Target volumes; Method of treatment.	Treatment planning note present and defining: Treatment intent (curative vs. palliative); Target volumes; Method of treatment.	/5
	Simulation note/process	CT simulation; Set up and patient position documented; Appropriate immobilization used (ie inclined breast board, prone breast board, …).	CT simulation; Set up and patient position documented; Appropriate immobilization used.	/5
TREATMENT PLANNING	Treatment prescription	Breast/LNs: 45-50Gy in 1.8-2.0Gy/fx; 40-42.5Gy in 15-16 fractions. APBI (3D-CRT): 38.5Gy in 10 fractions. Tumor bed boost: 10-16Gy (Total dose 60-66 Gy).	CW/LNs: 45-50Gy in 1.8-2.0Gy/fx; 40-42.5 in 15-16 fractions. Tumor bed boost: 10-16Gy (Total dose 60-66 Gy).	/5
	Treatment technique	CT based 3D treatment planning performed Technique appropriate Whole Breast: Medial and lateral non-divergent tangential fields; Electronic compensation using forward planned field-in-field technique or IMRT. Partial Breast: Non-coplanar 3D-CRT technique per NSABP B39. Supraclavicular fossa (when appropriate): Off cord anterior supraclavicular field matched to breast tangents or IMRT. Axilla (when appropriate): Posterior "PAB" field matched to breast tangents or IMRT. Internal Mammary Lymph Nodes (when appropriate): Deep tangents; matched medial electron field; or IMRT.	CT based 3D treatment planning performed Technique appropriate Chest Wall: Medial and lateral non-divergent tangential fields; Electronic compensation using forward planned field-in-field technique IMRT; Surface bolus; matched electron fields or mixed electron/photon fields appropriate. Supraclavicular fossa (when appropriate): Off cord anterior supraclavicular field matched to breast tangents or IMRT. Axilla (when appropriate): Posterior "PAB" field matched to breast tangents or IMRT. Internal Mammary Lymph Nodes (when appropriate): Deep tangents; matched medial electron field; or IMRT.	/5
	Contouring	Target: CTV - tumor bed and/or CTV - whole breast; CTV – LNs (if applicable). Partial Breast: (if applicable) Tumor bed, CTV, PTV, and PTV_Eval per NSABP B39 definition Normal tissues: Lung and Heart.	Target: CTV – chest wall (optional for 3D-CRT but required for IMRT); CTV – LNs (if applicable). Normal tissues: Lung and Heart.	/5
	Treatment fields	Whole Breast: Appropriate tangential oriented fields covering entire breast. < 3.5 cm central lung distance. Enface 3D-CRT or IMRT fields are not appropriate except in special circumstances.	Chest Wall: Appropriate tangential oriented fields covering entire breast. < 3.5 cm central lung distance. Enface 3D-CRT or IMRT fields are not appropriate except in special circumstances.	/5

BREAST CANCER CHART REVIEW (page 2)

	Review Criteria	Breast Conserving Therapy	Post-Mastectomy	Points
TREATMENT PLANNING (cont.)	Treatment fields (cont.)	Partial Breast: (if applicable) 3D-CRT technique conformed to PTV per NSABP B39. 3-5 Tangential non-coplanar beams as per NSABP B39. Beams shall be targeted to PTV. Beams shall not be directed towards critical normal structures including heart and lungs. Supraclavicular fossa/Axilla: Appropriate use of Supraclav/PAB fields. Appropriate coverage of supraclavicular fossa and/or axilla.	Supraclavicular fossa/Axilla: Appropriate use of Supraclav/PAB fields. Appropriate coverage of supraclavicular fossa and/or axilla.	/5
	Dose constraints, treatment plan documentation, & dosimetry	Appropriate dose constraint directive for planning (IMRT only): Dose constraints documented; Target coverage: >95% of prescription covering >95% of the PTV; Normal tissue constraints: Lung (ipsilateral): 50% < 5 Gy, 35% < 10 Gy, and 15% < 20 Gy; Heart (left sided): 30% < 10 Gy, 5% < 20 Gy, and mean < 4 Gy; Heart (right sided): 10% < 10 Gy, 0% < 20 Gy, and mean < 4 Gy Treatment plan documentation: Plan signed and dated by physician; Isodose plan present; DVH present including: CTV/PTV, Lung, Heart (left side) Appropriate Plan Dosimetry: Whole Breast: Appropriate isodose distribution and CTV/PTV coverage: >95% of prescription covering >95% of the CTV/PTV. Normal tissue constraints: Hot spot: Max <115% of prescription. Lung (ipsilateral): 50% < 5 Gy, 35% < 10 Gy, 15% < 20 Gy (Whole breast only) and 34% < 20 Gy (Whole breast & lymph nodes). Heart (left sided): 30% < 10 Gy, 5% < 20 Gy, and mean < 4 Gy. Heart (right sided): 10% < 10 Gy, 0% < 20 Gy, and mean < 4 Gy. Partial Breast: (if applicable) per NSABP B39. Target Coverage: ≥ 90% of the prescribed dose covering ≥ 90% of PTV. Maximum dose: < 120%. Whole breast: < 60% of breast receiving ≥ 50% of the prescribed dose, and < 35% of breast receiving the prescribed dose. Contralateral breast: < 3% of the prescribed dose to any point. Ipsilateral lung: < 15% of the lung receiving 30% of the prescribed dose. Contralateral lung: < 15% of the lung receiving 5% of the prescribed dose. Heart (left-sided lesions): <40% receiving ≥ 5% of the prescribed dose.	Appropriate dose constraint directive for planning (IMRT only): Dose constraints documented; Target coverage: >95% of prescription covering >95% of the PTV; Normal tissue constraints: Lung (ipsilateral): 50% < 5 Gy, 35% < 10 Gy, and 15% < 20 Gy; Heart (left sided): 30% < 10 Gy, 5% < 20 Gy, and mean < 4 Gy; Heart (right sided): 10% < 10 Gy, 0% < 20 Gy, and mean < 4 Gy Treatment plan documentation: Plan signed and dated by physician; Isodose plan present; DVH present including: CTV/PTV, Lung, Heart (left side) Appropriate Plan Dosimetry: Appropriate isodose distribution and CTV/PTV coverage: >95% of prescription covering >95% of the CTV/PTV. Normal tissue constraints: Hot spot: Max <120% of prescription(1-2). Lung (ipsilateral): 50% < 5 Gy, 35% < 10 Gy, and 34% < 20 Gy. Heart (left sided): 30% < 10 Gy, 5% < 20 Gy, and mean < 4 Gy. Heart (right sided): 10% < 10 Gy, 0% < 20 Gy, and mean < 4 Gy.	/5
	Tumor bed boost	Boost planning for intact breast should consist of a CT-based isodose plan. Plan is signed and dated by physician.	Boost plan (if applicable) present, signed and dated by physician. Clinical set up for post mastectomy scar boost is acceptable, but this should be documented in the chart including set up photos and dose calculation.	
TREATMENT	Treatment verification	Port films/portal imaging on first day and then weekly or daily kV OBI.	Port films/portal imaging on first day and then weekly or daily kV OBI.	/5
	On-treatment review, physics chart check, and daily dose log	Weekly on treatment visit documented with dose, symptoms, and focused physical exam. Daily dose log documented. Physics chart review documented.	Weekly on treatment visit documented with dose, symptoms, and focused physical exam. Daily dose log documented. Physics chart review documented.	/5 /5
	Chart rounds/peer review	Prospective peer review document	Prospective peer review document	/5
SUM	Treatment summary	Treatment summary present including: Site(s) treated; Technique; Radiation energy or source; Dose; Dose per fraction; Number of fractions; Dates treated and elapse days; Summary of treatment tolerance or acute side effects.	Treatment summary present including: Site(s) treated; Technique; Radiation energy or source; Dose; Dose per fraction; Number of fractions; Dates treated and elapse days; Summary of treatment tolerance or acute side effects.	/5
	Follow-up	Follow up plan appropriate and documented; Follow up notes present.	Follow up plan appropriate and documented; Follow up notes present.	/5
	Overall appropriateness of care			/5

GASTROINTESTINAL ESOPHAGEAL CANCER CHART REVIEW (page 1)

	Review Criteria	Pre op	Post op	Points
H & P	Relevant history stated	History of GERD, achalasia, weight loss, dysphagia, odynophagia, aspiration, smoking, alcohol.	History of GERD, achalasia, weight loss, dysphagia, odynophagia, aspiration, smoking, alcohol, postoperative recovery.	/5
	Relevant physical findings	Lymphadenopathy (especially cervical) , abdominal mass.	Lymphadenopathy, abdominal mass, healing of surgical scars.	/5
	Appropriate staging (Imaging Reports should be submitted in data set)	esophagogastroduodenoscopy, endoscopic ultrasound, CT of chest, abdomen, pelvis +/- neck or optional PET/CT. Optional bronchoscopy for tumors above carina.	esophagogastroduodenoscopy, endoscopic ultrasound, CT of chest, abdomen, pelvis +/- neck or optional PET/CT. Optional bronchoscopy for tumors above carina.	/5
	Pathology report/ Surgical/ endoscopic reports	Location of biopsy/surgery, tumor histology, lymphovascular space invasion, perineural invasion, grade.	Location of biopsy, depth of tumor penetration in esophageal wall or adjacent organs, histology, grade, number of lymph nodes recovered and examined.	/5
	Appropriate patient selection for treatment/ Discussion of options	Preoperative chemoradiation to improve rate of margin-negative resection, locoregional control and survival or definitive chemoradiation for patients not candidates for surgery. Treatment options discussed and specified.	Patient/indications appropriate for treatment. For esophageal cancer T3 or node positive disease, positive margins, incomplete surgical staging, other clearly defined criteria well documented in consultation note. Treatment options discussed and specified.	/5
SIMULATION	Appropriate site specific consent form listing side effects (Signed and dated by patient and radiation oncologist)	Dysphagia, odynophagia, skin irritation/pain, nausea, cough, fatigue, radiation pneumonitis, heart disease, hypothyroidism, risk of need for feeding tube, liver damage.	Skin irritation/pain, nausea, cough, fatigue, radiation pneumonitis, heart disease, hypothyroidism, stomach ulcers, risk of need for feeding tube, liver damage.	/5
	Appropriate treatment plan note (Signed and dated by radiation oncologist	Concurrent chemotherapy noting agent, mode of delivery, frequency of radiation and chemotherapy. At least 95% of the PTV shall receive prescribed dose of 4500 – 5400 cGy at 1.8 Gy per fraction.	Concurrent chemotherapy noting agent, mode of delivery, frequency of radiation and chemotherapy. At least 95% of the PTV shall receive prescribed dose of 4500 – 5400 cGy at 1.8 Gy per fraction.	/5
	Appropriate simulation note/process	Patient position supine with arms up in vac lock bag with esophageal, contrast optional IV contrast. Set up documentation noting CT sim, above supraclav to below kidneys if treating celiac axis.	Patient position supine with arms up in vac lock bag with esophageal, contrast optional IV contrast. Set up documentation noting CT sim, above supraclav to below kidneys if treating celiac axis.	/5
TREATMENT PLANNING	Appropriate treatment prescription (beam energy, treatment technique, isodose line specified)	At least 95% of the PTV should receive the prescription dose of 41.4-50.4 Gy in 1.8 to 2 Gy fx preoperatively or 50 to 63 Gy in 1.8 to 2 Gy fx definitively. Prescription should ideally specify isodose line prescribed to, not "per plan"	At least 95% of the PTV should receive the prescription dose of 45-60 Gy in 1.8 to 2 Gy fx postoperatively. Prescription should ideally specify isodose line prescribed to, not "per plan"	/5
	Appropriate dose constraints	If IMRT utilized, planning dose constraints utilized and appropriate. Normal tissue dose constraints are appropriate. For esophageal cancer follow CALGB 80803/RTOG 1175. Lung V20 ≤20%, V30 ≤15%, V40 ≤10%, V10 ≤40%; Cord max ≤45 Gy; Bowel Max < Max PTV dose, D05 ≤45 Gy; Heart V30 ≤30%, mean < 30 Gy; Kidneys, no more than 33% of the volume can receive 18 Gy (evaluate each kidney separately). Liver V20 ≤30%, V30 ≤20%, mean < 25 Gy. Stomach mean < 30 Gy (if not within PTV), max <54 Gy.	If IMRT utilized, planning dose constraints utilized and appropriate. Normal tissue dose constraints are appropriate. For esophageal cancer follow CALGB 80803/RTOG 1175. Lung V20 ≤20%, V30 ≤15%, V40 ≤10%, V10 ≤40%; Cord max ≤45 Gy; Bowel Max < Max PTV dose, D05 ≤45 Gy; Heart V30 ≤30%, mean < 30 Gy; Kidneys, no more than 33% of the volume can receive 18 Gy (evaluate each kidney separately). Liver V20 ≤30%, V30 ≤20%, mean < 25 Gy. Stomach mean < 30 Gy (if not within PTV), max <54 Gy.	/5
	Appropriate treatment technique	Follow CALGB 80803/RTOG 1175. 3DCRT or IMRT or proton therapy.	Follow CALGB 80803/RTOG 1175. 3DCRT or IMRT or proton therapy.	/5
	Appropriate contouring (Should ideally submit 4-6 contour images per plane that include target volumes and OARs)	Normal tissues will be outlines as solid structures. Multiple images should be available, clearly identifying OARs.	Normal tissues will be outlines as solid structures. Multiple images should be available, clearly identifying OARs.	/5
	Appropriate treatment fields/volumes	Follow CALGB 80803/RTOG 1175. GTV/CTV/PTV are appropriate. Periesophageal lymph nodes covered. Mediastinal lymph nodes for mid- and upper- thoracic esophagus primary. Celiac axis is treated for distal esophageal/GE junction cancers. Supraclavicular lymph nodes treated for cervical esophagus primary.	Follow CALGB 80101/RTOG 0571. GTV/CTV/PTV are appropriate.	/5
	Appropriate dosimetry	DVH shown. Isodose distributions shown. Dose constraints and target coverage met. All OARs and target volumes must be clearly identifiable.	DVH shown. Isodose distributions shown. Dose constraints and target coverage met. All OARs and target volumes must be clearly identifiable.	/5

GASTROINTESTINAL ESOPHAGEAL CANCER CHART REVIEW (page 2)

	Review Criteria	Pre op	Post op	Points
TREATMENT	Appropriate treatment verification	Use support films/portal imaging on first day and then weekly. Daily on-line target localization to account for interfraction organ motion and set up variability is desirable but not mandatory.	Use support films/portal imaging on first day and then weekly. Daily on-line target localization to account for interfraction organ motion and set up variability is desirable but not mandatory.	/5
	Weekly on-treatment documentation (by radiation oncologist)/daily dose log/ physics chart reviews/chart rounds(initial and weekly physics)	All are performed OTV notes document patient symptoms as well as an appropriate management plan.	All are performed OTV notes document patient symptoms as well as an appropriate management plan.	/5
	Chart rounds/Case peer review	Performed	Performed	/5
SUMMARY	Treatment summary (Stating treated site(s), Technique, Beam energy, Tx dates, Elapsed Days, pre-RT/ Concurrent Chemo [agent, frequency], Acute toxicity/ breaks in Tx)	Complete and signed by radiation oncologist	Complete and signed by radiation oncologist	/5
	Follow-up plan	An appropriate follow-up plan including future patient evaluation, imaging, or other procedures is documented.	An appropriate follow-up plan including future patient evaluation, imaging, or other procedures is documented.	/5
	Overall appropriateness of care			/5

GASTROINTESTINAL UPPER (HEPATOBILIARY/PANCREAS/GASTRIC) CANCER CHART REVIEW (page 1)

	Review Criteria	Pre op	Post op	Points
H & P	Relevant history stated	History of inflammatory bowel disease or Crohn's, chronic liver disease, chronic pancreatitis, GERD, CA19-9, AFP (as appropriate) nausea/vomiting, postprandial fullness, abdominal pain, hematemesis/melena, weight loss, jaundice	History of inflammatory bowel disease or Crohn's, chronic liver disease, chronic pancreatitis, GERD, CA19-9, AFP (as appropriate) nausea/vomiting, postprandial fullness, abdominal pain, hematemesis/melena, weight loss, jaundice	/5
	Relevant physical findings	Jaundice, hepatomegaly, abdominal tenderness, abdominal softness	Jaundice, hepatomegaly, abdominal tenderness, abdominal softness	/5
	Appropriate staging	CT or MRI abdomen/pelvis, CXR/CT chest, PET is optional but not required, EUS, laparoscopy, liver function tests, CA19-9, AFP	CT or MRI abdomen/pelvis, CXR/CTchest, PET is optional but not required, liver function tests, CA19-9, AFP	/5
	Pathology report/Surgical reports	Location of biopsy/surgery, tumor histology, lymphovascular space invasion, perineural invasion, grade	Tumor histology, depth, grade, perineural and lymphovascular space invasion, perineural invasion, number of lymph nodes resected and involved, margin status	/5
	Appropriate patient selection for treatment/ Discussion of options	Appropriate preoperative/definitive treatment options are discussed with the patient and specified.	Appropriate postoperative treatment options are discussed with the patient and specified.	/5
SIMULATION	Appropriate site specific consent form listing side effects (Signed and dated by patient and radiation oncologist)	-Fatigue -Nausea/vomiting/anorexia -Weight loss -Dermatitis -Increased frequency of bowel movements or change in stool consistency -Bowel injury (ulceration, bleeding, perforation, fistula, obstruction) -Liver dysfunction -Biliary obstruction -Abdominal discomfort	-Fatigue -Nausea/vomiting/anorexia -Weight loss -Dermatitis -Increased frequency of bowel movements or change in stool consistency -Bowel injury (ulceration, bleeding, perforation, fistula, obstruction) -Liver dysfunction -Biliary obstruction -Abdominal discomfort	/5
	Appropriate treatment plan note (Signed and dated by radiation oncologist)	-Consideration of fiducial markers for liver and pancreas tumors especially if using hypofractionation -Consideration of motion management technique especially if using hypofractionation (abdominal compression, breath-hold, gating) -Concurrent chemotherapy (if applicable) noting agent, mode of delivery, frequency of tx -Oral and IV contrast (if appropriate)	-Oral and IV contrast -NPO at least 2 hours -Concurrent chemotherapy (if applicable) noting agent, mode of delivery, frequency of tx	/5
	Appropriate simulation note/process	-CT-based simulation detailing the superior and inferior extent of the scan. -Consider 4D CT simulation, breath hold/management, abdominal compression -Patient setup documentation -Oral and IV contrast -NPO at least 2 hours	-CT-based simulation detailing the superior and inferior extent of the scan. -Consider 4D CT simulation, breath hold/management, abdominal compression -Patient setup documentation -Oral and IV contrast -NPO at least 2 hours	/5
TREATMENT PLANNING	Appropriate treatment prescription (beam energy, treatment technique, isodose line specified)	-Target volume coverage should be specified (e.g. at least 95% PTV coverage by the 95% prescription isodose line) -Standard fractionation is appropriate (45-54 Gy in 1.8-2 Gy fractions) -Hypofractionation/SBRT may be appropriate in 3-15 fractions for liver/pancreas tumors	-Target volume coverage should be specified (e.g. at least 95% PTV coverage by the 95% prescription isodose line) -45-54 Gy in 1.8-2 Gy fractions -A boost to at least 54 Gy is appropriate if gross residual disease provided normal tissue constraints are achieved	/5
	Appropriate dose constraints	If IMRT or SBRT utilized, planning dose constrains listed and appropriate. Normal tissue dose constraints are appropriate.	If IMRT or SBRT utilized, planning dose constrains listed and appropriate. Normal tissue dose constraints are appropriate	/5
	Appropriate treatment technique	3D-CRT or IMRT/SBRT. If utilizing IMRT or SBRT, appropriate techniques include planning per RTOG 0848, RTOG 1112, NRG GI003 or Alliance A021501	For pancreas cancer, follow RTOG 0848	/5
	Appropriate contouring	-Normal tissues will be outlined as solid structures -GTV/CTV/PTV are appropriate -If 4D CT simulation was done, then IGTV/ITV are appropriate -Fiducial markers if present may be contoured for IGRT	-Normal tissues will be outlined as solid structures -GTV/CTV/PTV are appropriate -If 4D CT simulation was done, then IGTV/ITV are appropriate -Fiducial markers if present may be contoured for IGRT	/5

GASTROINTESTINAL UPPER (HEPATOBILIARY/PANCREAS/GASTRIC) CANCER CHART REVIEW (page 2)

	Review Criteria	Pre op	Post op	Points
TREATMENT PLANNING cont.	Appropriate treatment fields/volumes	3D-CRT or IMRT/SBRT, as long as reasonably applied SBRT per published studies or RTOG 1112, NRG GI003 or Alliance A021501, if appropriate	For pancreas cancer, follow RTOG 0848	/5
	Appropriate dosimetry	DVH/isodose distribution/dose constraints per RTOG 0848, RTOG 1112 , NRG GI003 or Alliance A021501 (as appropriate).	DVH/isodose distribution/dose constraints per RTOG 0848, RTOG 1112 (as appropriate).	/5
TREATMENT	Appropriate treatment verification	-Use support films/portal imaging on first day and then weekly -Daily image guidance should be performed if using hypofractionation/SBRT to verify target alignment -At least once-weekly MVCT/CBCT should be considered to evaluate gastric filling	-Use support films/portal imaging on first day and then weekly -At least once-weekly MVCT/CBCT should be con sidered to evaluate gastric filling	/5
	Weekly on-treatment documentation (by radiation oncologist)/daily dose log/physics chart reviews/ chart rounds(initial and weekly physics)	-All are performed -OTV notes document patient symptoms as well as an appropriate management plan	-All are performed -OTV notes document patient symptoms as well as an appropriate management plan	/5
	Chart rounds/Case peer review	Performed	Performed	/5
SUMMARY	Treatment summary (Stating treated site(s), Technique, Beam energy, Tx dates, Elapsed Days, pre-RT/ Concurrent Chemo [agent, frequency], Acute toxicity/breaks in Tx)	Complete and signed by radiation oncologist	Complete and signed by radiation oncologist	/5
	Follow-up plan	An appropriate follow-up plan including future patient evaluation, imaging, or other procedures is documented	An appropriate follow-up plan including future patient evaluation, imaging, or other procedures is documented	/5
	Overall appropriateness of care			/5

GASTROINTESTINAL LOWER (ANAL CANAL/RECTUM) CANCER CHART REVIEW (page 1)

	Review Criteria	Pre op	Post op	Points
H & P	Relevant history stated	Continence/function of anal sphincter, history of inflammatory bowel disease,Crohn's, ulcerative colitis	Continence/function of anal sphincter, history of inflammatory bowel disease,Crohn's, ulcerative colitis	/5
	Relevant physical findings	Pertinent, but thorough PE including inguinal lymph node exam if applicable (very low rectal/anal canal tumors). Deferred DRE must be later documented as performed and reasons for deferral should be provided.	Digital rectal examination.	/5
	Appropriate staging (Imaging Reports should be submitted in data set)	Trans Rectal Ultrasound, CT or MRI of chest/abdomen/Pelvis, CEA, Liver function tests, PET CT optional/complementary or can be used instead of CT/MRI.	CT or MRI of chest/abdomen/Pelvis, CEA, Liver function tests, PET CT optional/complementary or can be used instead of CT/MRI.	/5
	Pathology report/Surgical/ endoscopic reports	Location of biopsy, depth of tumor penetration into rectal wall, lymphovascular space invasion, and grade.	Tumor depth, grade, perineural and lymphovascular space invasion, number of perirectal and mesenteric lymph nodes recovered and examined.	/5
	Appropriate patient selection for treatment/Discussion of options	Distal rectal cancers that are likely to be unresectable without downstaging, early stage patients close to sphincter muscles to improve chances of negative radial margins, obvious T3 or Node positive patients that will require radiation post operatively. Treatment options discussed and specified.	Patient/indications appropriate for treatment. (for rectal Ca-T3 or node positive disease, positive margins, incomplete surgical staging, other clearly defined criteria well documented in consultation note) Treatment options discussed and specified.	/5
SIMULATION	Appropriate site specific consent form listing side effects (Signed and dated by patient and radiation oncologist)	-Dysuria -Increased frequency of bowel movements or change in stool consistency -Tenesmus -Mild fatigue -Rectal bleeding -Chronic bowel/bladder symptoms -Decreased blood counts -Skin reactions/redness/peeling (esp. anal) -Small bowel inflammation/possible SBO	-Dysuria -Abdominal cramps -Increased frequency of bowel movements or change in stool consistency -Tenesmus -Mild fatigue -Chronic bowel/bladder symptoms -Decreased blood counts -Skin reactions/redness/peeling (esp.anal) -Small bowel inflammtion/possible SBO	/5
	Appropriate treatment plan note (Signed and dated by radiation oncologist)	-Concurrent chemotherapy noting agent, mode of delivery, frequency of tx -Patient positioned prone in belly drop board to displace small bowel out of treatment fields, marker on anus, dilute contrast in rectum via rectal tube	-Concurrent chemotherapy noting agent, mode of delivery, frequency of tx -Patient positioned prone in belly drop board to displace small bowel out of treatment fields, marker on anus, dilute contrast in rectum via rectal tube (if not possible e.g. due to colostomy positioning, reason should ideally be documented)	/5
	Appropriate simulation note/process	CT-based, top of iliac crests to below ischial rami, rectal contrast, anal marker, prone position with belly drop/cut out. Supine, immobilization device(s), and Set up documentation.	CT-based, top of iliac crests to below perineum if APR performed, rectal contrast, anal marker, prone position with belly drop/cut out. Supine, immobilization devices(s), and Set up documentation.	/5
TREATMENT PLANNING	Appropriate treatment prescription (beam energy, treatment technique, isodose line specified)	At least 95% of the PTV should receive prescribed dose of 4500 – 5400 cGy at 1.8 Gy per fraction. For anal canal, dosing is stage based and should be as per RTOG 0529. 25 Gy in 5 fractions is also appropriate in T3, N0-2 pts per TROG 01.04	At least 95% of the PTV should receive prescribed dose of 4500 – 5400 cGy at 1.8 Gy per fraction. Higher dose if gross residual disease without brachytherapy boost.	/5
	Appropriate dose constraints	If IMRT utilized, planning dose constrains listed and appropriate. Normal tissue dose constraints are appropriate. For rectal cancer, follow RTOG 0822 For anal canal, follow RTOG 0529	If IMRT utilized, planning dose constrains listed and appropriate. Normal tissue dose constraints are appropriate. For rectal cancer, follow RTOG 0822 For anal canal, follow RTOG 0529	/5
	Appropriate treatment technique	If IMRT: For rectal cancer, follow RTOG 0822 For anal canal, follow RTOG 0529	If IMRT: For rectal cancer, follow RTOG 0822 For anal canal, follow RTOG 0529	/5
	Appropriate contouring (Should ideally submit 4-6 contour images per plane that include target volumes and OARs)	Normal tissues will be outlined as solid structures. GTV/CTV/PTV are appropriate. Volumes as defined per RTOG 0822 For anal canal, follow RTOG 0529	Normal tissues will be outlined as solid structures. GTV/CTV/PTV are appropriate. Volumes as defined per RTOG 0822 For anal canal, follow RTOG 0529	/5

GASTROINTESTINAL LOWER (ANAL CANAL/RECTUM) CANCER CHART REVIEW (page 2)

	Review Criteria	Pre op	Post op	Points
TREATMENT PLANNING cont.	Appropriate treatment fields/volumes	For rectal cancer, follow RTOG 0822 For anal canal, follow RTOG 0529	For rectal cancer, follow RTOG 0822 For anal canal, follow RTOG 0529	/5
	Appropriate dosimetry Isodose Plan sined and dated by radiation oncologist	DVH/isodose distribution/dose constraints.	DVH/isodose distribution/dose constraints.	/5
TREATMENT	Appropriate treatment verification	Use support films/portal imaging on first day and then weekly. Daily on-line target localization to account for interfraction organ motion and set up variability is desirable but not mandatory.	Use support films/portal imaging on first day and then weekly. Daily on-line target localization to account for interfraction organ motion and set up variability is desirable but not mandatory.	/5
	Weekly on-treatment documentation (by radiation oncologist)/daily dose log/physics chart reviews/ chart rounds(initial and weekly physics)	All are performed OTV notes document patient symptoms as well as an appropriate management plan.	All are performed OTV notes document patient symptoms as well as an appropriate management plan.	/5
	Chart rounds/Case peer review	Performed	Performed	/5
SUMMARY	Treatment summary (Stating treated site(s), Technique, Beam energy, Tx dates, Elapsed Days, pre-RT/ Concurrent Chemo [agent, frequency], Acute toxicity/breaks in Tx)	Complete and signed by radiation oncologist.	Complete and signed by radiation oncologist.	/5 /5
	Follow-up plan	An appropriate follow-up plan including future patient evaluation, imaging, or other procedures is documented.	An appropriate follow-up plan including future patient evaluation, imaging, or other procedures is documented.	
	Overall appropriateness of care			/5

GENITOURINARY/PROSTATE BRACHYTHERAPY CHART REVIEW (page 1)

	Review Criteria	Permanent Seed Implants	High Dose Rate Brachytherapy	Points
H & P	Relevant history stated	Urinary symptom history (including pretreatment urinary score e.g. IPSS), prior TURP, baseline gastrointestinal function (history rectal or inflammatory bowel disease), erectile dysfunction history, major co-morbidities and illnesses relevant to anesthesia. Prior PSA testing. Prior Malignancy, Previous history of chemotherapy or radiation therapy	Urinary symptom history (including pretreatment urinary score e.g. IPSS), prior TURP, baseline gastrointestinal function (history rectal or inflammatory bowel disease), erectile dysfunction history, major co-morbidities and illnesses relevant to anesthesia. Prior PSA testing. Prior Malignancy, Previous history of chemotherapy or radiation therapy	/5
	Relevant physical findings	Digital rectal examination, heart and lung finding relevant to anesthesia	Digital rectal examination, heart and lung finding relevant to anesthesia	/5
	Appropriate staging	T-stage, PSA, Gleason score, PSA, CT, MRI, bone scan when appropriate.	T-stage, PSA, Gleason score, PSA, CT, MRI, bone scan when appropriate.	/5
	Pathology report/Surgical reports	Gleason grade and a measure of % cores positive. PNI or gross ECE, Location of disease (Apex, Mid, Base)	Gleason grade and a measure of % cores positive. PNI or gross ECE, Location of disease (Apex, Mid, Base)	/5
	Appropriate patient selection for treatment/ Discussion of options	Patients with localized to pelvis prostate cancer or reason stated for exception. Medically suitable for anesthesia, Alternatives including surveillance, surgery, and external radiation, and androgen deprivation	Patients with localized to pelvis prostate cancer or reason stated for exception. Medically suitable for anesthesia, Alternatives including surveillance, surgery, and external radiation, and androgen deprivation	/5
SIMULATION	Appropriate consent form listing side effects	Increased urinary symptoms related to outflow obstruction and inflammation such as frequency, nocturia, urgency, dysuria, straining, hematuria, and incontinence. Chronic or intermittent bowel dysfunction including frequency, urgency, pain, tenesmus, rectal bleeding, diarrhea or constipation Erectile dysfunction, Risks of Anesthesia Mention of issues relevant to low level radiation and screening metal detection Urinary or GI fistula with possible diversion Decreased ejaculate	Increased urinary symptoms related to outflow obstruction and inflammation such as frequency, nocturia, urgency, dysuria, straining, hematuria, and incontinence. Chronic or intermittent bowel dysfunction including frequency, urgency, pain, tenesmus, rectal bleeding, diarrhea or constipation Erectile dysfunction, Risks of Anesthesia Mention of issues relevant to low level radiation and screening metal detection Urinary or GI fistula with possible diversion Decreased ejaculate	/5
	Appropriate treatment plan note	Monotherapy (brachytherapy alone) vs. combined with external beam. Treatment of prostate region only or relevant lymph nodes. Discussion of use or not of androgen deprivation. Decreased ejaculate	Monotherapy (brachytherapy alone) vs. combined with external beam. Treatment of prostate region only or relevant lymph nodes. Discussion of use or not of androgen deprivation. Decreased ejaculate	/5
	Appropriate simulation note/process	Selection of radionuclide, number and strength of seeds, pretreatment prostate volume assessment, indication whether preplan or real-time treatment planning will be used. Appropriate radiation safety procedures for source shipping, handling, and storage.	Transrectal ultrasound real-time or CT based simulation.	/5
TREATMENT PLANNING	Appropriate treatment prescription	Written direction documented prior to the procedure and modified for changes needed during course of implant procedure Typical seed strength: I-125 0.3 - 0.6 mCi Pd-103 1.1 - 2,2 mCi CS-131 2.5 - 3.9 mCi Prescription dose consistent with standards for the selected radionuclide (AAPM –TG 43 or successors). Monotherapy Iodine 125 (140-160 Gy) Monotherapy Palladium 103 (110-125 Gy) Monotherapy Cesium 131 (110 -115 Gy) EBRT 40-50.4 Gy + I-125 (108-110 Gy) EBRT 90-100 Gy + Pd-103 (80-110 Gy) EBRT 40-46 Gy + Cs-131 (90-100 Gy)	Written directive documented prior to treatment delivery Prescription dose consistent with standards for HDR brachytherapy vary but the approximate radiobiological equivalent of the following HDR monotherapy (6-7.5 Gy x6, 9-10 Gy x4) Combined EBRT 40-46Gy (1.8-2.0 fractions) + HDR (5-6 Gy x 4, 9-10Gy x2) LN doses (if administered) 45-50 Gy	/5

GENITOURINARY/PROSTATE BRACHYTHERAPY CHART REVIEW (page 2)

	Review Criteria	Permanent Seed Implants	High Dose Rate Brachytherapy	Points
TREATMENT PLANNING cont.	Appropriate dose constraints	Dose constraints appropriate Follow ABS guidelines	Rectal wall 80-85% (D 0.1cc) Bladder wall 80-100% (D 0.1cc) Bladder trigone (Foley balloon) 80-85% (D 0.1cc) Urethra combined with EBRT 120-140% Urethra monotherapy 110-125% Urethra s/p TUR 105-110%	/5
	Appropriate treatment technique	Free or stranded seeds with appropriate delivery method	Template transperineal Transrectal ultrasound guidance Fluoroscopy and cystoscopy optional	/5
	Appropriate contouring	Normal tissues including the rectum, prostate, seminal vesicles, bladder, and urethra depicted	Normal tissues including the rectum, prostate, seminal vesicles, bladder, and urethra depicted	/5
	Appropriate dosimetry	Dose Volume Histogram, Isodose cloud depiction, Selected point doses, normal tissue doses (bladder, urethra, rectum) D90 (dose to 90% of contoured prostate target V100 (given as a percentage of the prostate CTV covered by the 100% isodose)	Ultrasound or CT based dosimetry Dose Volume Histogram, Isodose cloud depiction, Selected point doses, normal tissue doses (bladder, urethra, rectum) D90 (dose to 90% of contoured prostate target V100 (given as a percentage of the prostate CTV covered by the 100% isodose)	/5
TREATMENT	Appropriate treatment verification	CT and/or MRI scan for post-operative dosimetry Documentation of seed loss	HDR treatment parameters confirmed prior to treatment Basic dose calculation performed and documented prior to each HDR treatment fraction Appropriate documentation of treatment delivery upon completion	/5
	Weekly on-treatment documentation/daily dose log/physics chart reviews	Appropriate documentation of physics services including selected seed strength verification, confirmation of preplan or real-time planned activity per seed and totals implanted, post implant patient and room exit surveys, provision of appropriate radiation safety education, instructions, and documentation for medical staff and patient	Appropriate documentation of number of fractions, dose per fraction, and total planned dose to designated target. Physics confirmation of treatment parameters and doses	/5
	Chart rounds/Case peer review	Documentation and reporting of any misadministration (i.e. sufficient sources implanted within or outside the clinical target to significantly impact tumor control or complication rates	Documentation and reporting of any misadministration (i.e. sufficient sources implanted within or outside the clinical target to significantly impact tumor control or complication rates Urgent or emergency source removal shall be documented.	/5
	Treatment summary	Radiation source, total seeds, activity/seed, total activity, tumor dose, and brief clinical summary Signed and sent to referring physicians	Dose per fraction, number of fractions, total dose to target, and brief clinical summary Signed and sent to referring physicians	/5
SUMMARY	Follow-up plan	Documented planned follow up	Documented planned follow up	/5
	Overall appropriateness of care			/5

GENITOURINARY/PROSTATE CANCER CHART REVIEW (page 1)

	Review Criteria	Intact Prostate	Post-Prostatectomy	Points
H & P	Relevant history stated	Prostate symptom score (IPSS), potency/sexual history, comorbidities, prior TURP, medical issues (unstable angina, COPD, hepatic insufficiency, etc.). History of inflammatory bowel disease. PSA nadir, PSA doubling time. Prior Malignancy, Previous history of chemotherapy or radiation therapy.	Prostate symptom score (IPSS), potency/sexual history, comorbidities, prior TURP, medical issues (unstable angina, COPD, hepatic insufficiency, etc.). History of inflammatory bowel disease. PSA nadir, PSA doubling time. Prior Malignancy, Previous history of chemotherapy or radiation therapy.	/5
	Relevant physical findings	Digital rectal examination.	Digital rectal examination.	/5
	Appropriate staging	Gleason score, PSA, PSA doubling time, PSA density, T, N, M stage, CT, MRI, bone scan when appropriate.	Gleason score, PSA, PSA doubling time, PSA density, T, N, M stage, CT, MRI, bone scan when appropriate.	/5
	Pathology report/ Surgical reports	Number of cores positive/number taken/ % core positive. PNI or gross ECE, Location of disease	Capsular penetration, seminal vesicle involvement, nodal involvement, margin status.	/5
	Appropriate patient selection for treatment/ Discussion of options	Patient/indications appropriate for treatment. Treatment options discussed.	Patient/indications appropriate for treatment. Treatment options discussed.	/5
SIMULATION	Appropriate consent form listing side effects	-loss of ejaculate, sterility, urinary stricture, cancers caused by radiation -Increased urinary frequency -Urgency -Burning or discomfort -Straining with urination -Increased frequency of bowel movement or change in stool consistency -Increased straining/discomfort with bowel movements -Mild fatigue -Rectal bleeding -Chronic bowel/bladder symptoms -Erectile dysfunction	-urinary stricture, cancers caused by radiation -Increased urinary frequency -Urgency -Burning or discomfort -Straining with urination -Increased frequency of bowel movement or change in stool consistency -Increased straining/discomfort with bowel movements -Mild fatigue -Rectal bleeding -Chronic bowel/bladder symptoms -Erectile dysfunction	/5
	Appropriate treatment plan note	Monotherapy vs. combined, Timing/duration of ADT, inclusion of regional lymph nodes, etc.	Timing/duration of ADT, inclusion of lymph nodes.	/5
	Appropriate simulation note/process	CT-based, Identification of apex of prostate (Urethrogram, Imaging, ect), supine with a mobilization cast/molded cradle, bladder fullness, slice thickness of ≤3mm, images from top of iliac crest to perineum. Set up documentation.	CT-based, Identification of apex of prostate (Urethrogram, Imaging, ect), supine with a mobilization cast/molded cradle, bladder fullness, slice thickness of ≤3mm, images from top of iliac crest to perineum. Set up documentation.	/5
TREATMENT PLANNING	Appropriate treatment prescription	Prostate only/prostate and seminal vesicles/prostate plus regional lymph nodes/use of neoadjuvant/ concomitant/ adjuvant androgen deprivation therapy, dose appropriate for risk. Dose per fraction of 1.8 Gy. 7560 cGy - 7920 cGy	At least 95% of the PTV shall receive prescribed dose of 64.8 to 70.2 Gy at 1.8 Gy per fraction.	/5
	Appropriate dose constraints (if IMRT):	Bladder constraint: No more than 25% volume, receives dose that exceeds 75 Gy. V65 < 50%, V70 < 35%, V75 <25%, V80 < 15% Rectum constraint: No more than 25% volume, receives dose that exceeds 70 Gy. V50 < 50%, V60 < 35%, V65 <30%, V70 < 25%, V75 < 15%, V78 < 5%	Rectum: ≤35% and 55% of rectum – shall receive ≥65 Gy and ≥40 Gy respectively. Bladder: ≤50% and 70% of bladder (-prostate bed, CTV) – shall receive ≥65 Gy and ≥40 Gy respectively.	/5
	Appropriate treatment technique	Follow RTOG 0815 protocol.	Follow RTOG 0534 protocol.	/5
	Appropriate contouring	Normal tissues will be outlined as solid structures, including the rectum, prostate, seminal vesicles, bladder and femoral heads. GTV/CTV/PTV, bladder, femoral heads, rectum, seminal vesicles, lymph nodes, follow parameters outlined in RTOG 0815.	Normal tissues will be outlined as solid structures, including the rectum, bladder and femoral heads. The rectum will be outlined from the anterior flexion to rectosigmoid superiorly to the ishial tuberosities inferiorly. The femoral head shall be outlined. The prostatic bed CTV shall be contoured with appropriate superior, inferior, anterior, and posterior, and shall follow parameters outlined in RTOG 0534 following the consensus definition of the prostate bed.	/5

GENITOURINARY/PROSTATE CANCER CHART REVIEW (page 2)

	Review Criteria	Intact Prostate	Post-Prostatectomy	Points
TREATMENT PLANNING cont.	Appropriate treatment fields	Follow RTOG 0815 protocol.	Follow RTOG 0534 protocol.	/5
	Appropriate dosimetry	DVH/isodose distribution/dose constraints. Document metrics prescribed and achieved. Explain any deviations from planned metrics.	DVH/isodose distribution/dose constraints. Document metrics prescribed and achieved. Explain any deviations from planned metrics.	/5
TREATMENT	Appropriate treatment verification	Use support films/portal imaging on first day and then weekly. Daily on-line target localization (KV imaging with fiducials, trans-abdominal ultrasound, or other) to account for interfraction organ motion and set up variability.	Use support films/portal imaging on first day and then weekly. More often as needed.	/5
	Weekly on-treatment documentation/daily dose log/ physics chart reviews	Performed	Performed	/5
	Chart rounds/ Case peer review	Performed	Performed	/5
SUMMARY	Treatment summary	Complete and signed	Complete and signed	/5
	Follow-up plan	Documented	Documented	/5
	Overall appropriateness of care			/5

GYNECOLOGIC CANCER - BRACHYTHERAPY CHART REVIEW (page 1)

	Review Criteria	Intact Cervix/Uterus T&O /T&R/Heyman's	Postop Cervix/Uterus Intracavitary Vaginal	Any Circumstance Interstitial	Points
H & P	Relevant history stated	Prior GYN history Gravida/Para/ menopause Presenting GYN symptoms (bleeding, discharge, pain, etc.) Pre-brachytherapy sx, surgical history, relevant co-morbidities, sx affects of prior EBRT and chemo	Prior GYN history Gravida/Para/ menopause Preoperative GYN symptoms (bleeding, discharge, pain, etc.) Pre-brachytherapy sx, surgical history, relevant co-morbidities, sx affects of prior EBRT and chemo	Prior GYN history Gravida/Para/ menopause Presenting GYN symptoms (bleeding, discharge, pain, etc.) Pre-brachytherapy sx, surgical history, relevant co-morbidities, sx affects of prior EBRT and chemo	/5
	Relevant physical findings	Pelvic Exam (including inguinal LNs esp. for lower vaginal lesions) Pre-procedure heart and lung check	Pelvic Exam (including inguinal LNs esp. for lower vaginal lesions) Pre-procedure heart and lung check	Pelvic Exam (including inguinal LNs esp. for lower vaginal lesions) Pre-procedure heart and lung check	/5
	Appropriate staging	Documentation (diagram) original extent of disease (uterus cervix, vagina, parametria etc.) CT, MRI, PET, bone scan when appropriate	Documentation (diagram) original extent of disease (uterus, cervix, vagina, parametria etc.) CT, MRI, PET, bone scan when appropriate	Documentation (diagram) original extent of disease (uterus, cervix, vagina, parametria etc.) CT, MRI, PET, bone scan when appropriate	/5
	Pathology report/ Surgical reports/ Laboratory reports	Biopsy results (grade, histology etc.) Current CBC and blood chemistries	Biopsy results (grade, histology etc.) Surgical Pathology (grade, cervix and uterine invasion and number and sites of sampled and positive LNs	Biopsy results (grade, histology etc.) Current CBC and blood chemistries	/5
	Appropriate patient selection for treatment/ Discussion of options	Applicator appropriate for disease extent and patient anatomy Medical status permits needed analgesia and anesthesia Chemotherapy as needed Surgery (adjuvant hysterectomy or for brachytherapy guidance) as needed	Applicator appropriate for disease extent and patient anatomy Medical status permits needed analgesia and anesthesia Chemotherapy as needed	Applicator appropriate for disease extent and patient anatomy Medical status permits needed analgesia and anesthesia Chemotherapy as needed Surgery (adjuvant hysterectomy or for brachytherapy guidance) as needed	/5
SIMULATION	Appropriate consent form listing side effects	<u>Acute Side Effects</u> -Constitutional -Urinary (freq/urgency, hematuria, dysuria etc.) -GI (freq/urgency, bleeding, etc) -GYN (discharge, bleeding Skin (applicator site sx) Analgesia/Anesthesia risk -Hematologic (cytopenias and transfusion risks) <u>Chronic Side Effects</u> -Urinary (symptoms and dysfunction including fistula – urinary bypass -GI (symptoms and dysfunction including fistula – SBO / colostomy -GYN (pain, bleeding, discharge) Sexual symptoms (dryness, dyspareunia, inferitility-if appropriate) -Second malignancy risk	<u>Acute Side Effects</u> -Constitutional -Urinary (freq/urgency, hematuria, dysuria etc.) -GI (freq/urgency, bleeding, etc) -GYN (discharge, bleeding Skin (applicator site sx) Analgesia/Anesthesia risk -Hematologic (cytopenias and transfusion risks) <u>Chronic Side Effects</u> -Urinary (symptoms and dysfunction including fistula – urinary bypass -GI (symptoms and dysfunction including fistula – SBO / colostomy -GYN (pain, bleeding, discharge) Sexual symptoms (dryness, dyspareunia, inferitility-if appropriate) -Second malignancy risk	<u>Acute Side Effects</u> -Constitutional -Urinary (freq/urgency, hematuria, dysuria etc.) -GI (freq/urgency, bleeding, etc) -GYN (discharge, bleeding Skin (applicator site sx) Analgesia/Anesthesia risk -Hematologic (cytopenias and transfusion risks) <u>Chronic Side Effects</u> -Urinary (symptoms and dysfunction including fistula – urinary bypass -GI (symptoms and dysfunction including fistula – SBO / colostomy -GYN (pain, bleeding, discharge) Sexual symptoms (dryness, dyspareunia, inferitility-if appropriate) -Second malignancy risk	/5
	Appropriate treatment plan note	Brachytherapy method and applicator appropriately selected Appropriate equipment available for procedure Brachytherapy dose EBRT coordination, if needed Chemotherapy coordination, if needed	Brachytherapy method and applicator appropriately selected Appropriate equipment available for procedure Brachytherapy dose EBRT coordination, if needed Chemotherapy coordination, if needed	Brachytherapy method and applicator appropriately selected Appropriate equipment available for procedure Brachytherapy dose EBRT coordination, if needed Chemotherapy coordination, if needed	/5
	Implant placement procedure note	Procedure note present and signed	Procedure note present and signed	Procedure note present and signed	/5
	Appropriate simulation note/ process	<u>Brachytherapy focused</u> CT, MRI, 2D X-ray Immobilization device Fiducial markers Bowel and bladder contrast	<u>Brachytherapy focused</u> CT, MRI, 2D X-ray Immobilization device Fiducial markers Bowel and bladder contrast	<u>Brachytherapy focused</u> CT, MRI, 2D X-ray Immobilization device Fiducial markers Bowel and bladder contrast	/5

GYNECOLOGIC CANCER - BRACHYTHERAPY CHART REVIEW (page 2)

	Review Criteria	Intact Cervix/Uterus T&O /T&R/Heyman's	Postop Cervix/Uterus Intracavitary Vaginal	Any Circumstance Interstitial	Points
TREATMENT PLANNING	Appropriate dose and fractionation	See ABS Guidelines Brachytherapy varies depending on modality integration and disease EBRT: 1.8-2 Gy/fraction Primary 25-50.4 Gy LNs 45-60 Gy	See ABS Guidelines Brachytherapy varies depending on modality integration and disease EBRT: 1.8-2 Gy/fx Primary 25-50.4 Gy LNs 45-60 Gy Vaginal monotherapy HDR range 7Gy x 3 to 6Gy x 6	See ABS Guidelines Brachytherapy varies depending on modality integration and disease EBRT: 1.8-2 Gy/fraction Primary 25-50.4 Gy LNs 45-60 Gy	/5
	Appropriate treatment volume	See ABS Guidelines Dose distribution and volume consistent with coverage of cervix or uterine primary with appropriate parametria and vaginal margins	See ABS Guidelines Typical upper 1/2 to 2/3s of vagina with lower 1/3 treatment based on special circumstances. Calculations at depth with dose at applicator surface dose(s) recorded	See ABS Guidelines Dose distribution highly variable, depending upon extent and anatomy of disease Unless specifically implanted LN doses are not adequately dosed with template brachytherapy. LN site specific brachytherapy is possible	/5
	Appropriate treatment technique	See ABS Guidelines Preferred Tandem and Ovoids, Tandem and Ring Less desirable Tandem and Cylinder	See ABS Guidelines Vaginal Cylinder single or multi-channel Other suitable intravaginal applicator or mould	See ABS Guidelines Perineal Template with catheter or needles Multiple tube and buttons Appropriate guidance imaging or surgical guidance Applicator stabilization	/5
	Appropriate contouring	2D vs. 3D imaging If 3D include defined targets such as gross tumor volume (GTV1/2, CTV, Cervix, Uterus or other relevant diseased structures. Contour bladder, urethra, rectum, sigmoid, small bowel, or other identifiable structures See GEC-ESTRO or similar target definition recommendations	2D vs. 3D imaging If 3D include defined applicator with designated margins Contour bladder, urethra, rectum, sigmoid, small bowel, or other identifiable structures	2D vs. 3D imaging If 3D include defined targets such as gross tumor volume (GTV1/2, CTV, Cervix, Uterus or other relevant diseased structures. Contour bladder, urethra, rectum, sigmoid, small bowel, or other identifiable structures See GEC-ESTRO or similar target definition recommendations	/5
	Appropriate dosimetry	2D imaging standard points A and B 3D Doses to Clinical Target Volume (CTV) and Gross Target Volume (GTV) if applicable including DVH and isodose cloud Normal tissue dose constraints to bladder, urethra, rectum, sigmoid colon, and small bowel as applicable 2D (contrast) or 3D (contoured organ)	2D imaging applicator specific dosimetry to surface and at depth to multiple applicator points 3D Doses to Clinical Target Volume (CTV) including DVH and isodose cloud Normal tissue dose constraints to bladder, urethra, rectum, sigmoid colon, and small bowel as applicable 2D (contrast) or 3D (contoured organ)	3D Doses to Clinical Target Volume (CTV) and Gross Target Volume (GTV) if applicable including DVH and isodose cloud D90, V100, V150, V200 desirable (not mandatory) Normal tissue dose constraints to bladder, urethra, rectum, sigmoid colon, and small bowel as applicable 2D (contrast) or 3D (contoured organ) D0.1cc, D1cc, D2cc desirable (not mandatory)	/5
TREATMENT	Appropriate treatment verification	HDR treatment parameters confirmed prior to treatment Basic dose calculation performed and documented prior to each HDR treatment fraction Appropriate documentation of treatment delivery upon completion Check simulations performed before subsequent HDR fractions as necessary	HDR treatment parameters confirmed prior to treatment Basic dose calculation performed and documented prior to each HDR treatment fraction Appropriate documentation of treatment delivery upon completion Check simulations performed before subsequent HDR fractions as necessary	HDR treatment parameters confirmed prior to treatment Basic dose calculation performed and documented prior to each HDR treatment fraction Appropriate documentation of treatment delivery upon completion Check simulations performed before subsequent HDR fractions as necessary	/5
	Weekly on-Tx doc/daily dose log/physics chart reviews	Appropriate documentation of number of fractions, dose per fraction, and total planned dose to designated target. Physics confirmation of treatment parameters and doses	Appropriate documentation of number of fractions, dose per fraction, and total planned dose to designated target. Physics confirmation of treatment parameters and doses	Appropriate documentation of number of fractions, dose per fraction, and total planned dose to designated target Physics confirmation of treatment parameters and doses	/5

GYNECOLOGIC CANCER - BRACHYTHERAPY CHART REVIEW (page 3)

	Review Criteria	Intact Cervix/Uterus T&O /T&R/Heyman's	Postop Cervix/Uterus Intracavitary Vaginal	Any Circumstance Interstitial	Points
TREATMENT cont.	Chart rounds/ Case peer review	Documentation and reporting of any misadministration (i.e. sufficient sources implanted within or outside the clinical target to significantly impact tumor control or complication rates Urgent or emergency source removal shall be documented.	Documentation and reporting of any misadministration (i.e. sufficient sources implanted within or outside the clinical target to significantly impact tumor control or complication rates Urgent or emergency source removal shall be documented.	Documentation and reporting of any misadministration (i.e. sufficient sources implanted within or outside the clinical target to significantly impact tumor control or complication rates Urgent or emergency source removal shall be documented.	/5
SUMMARY	Treatment summary	Dose per fraction, number of fractions, total dose to target, and brief clinical summary Signed and sent to referring physicians	Dose per fraction, number of fractions, total dose to target, and brief clinical summary Signed and sent to referring physicians	Dose per fraction, number of fractions, total dose to target, and brief clinical summary Signed and sent to referring physicians	/5
	Follow-up plan	Documented	Documented	Documented	/5
	Overall appropriateness of care				/5

GYNECOLOGIC CANCER CHART REVIEW (page 1)

	Review Criteria	Intact Cervix/Uterine	Postop Cervix/Uterine	Vulva/Vagina	Points
H & P	Relevant history stated	-Prior Gynecologic history (Gravida, Para, Menopausal status) -Current/Presenting Gynecologic symptoms (bleeding, discharge, pain, etc.) -Hemoglobin level (cervical cancer)	-Prior Gynecologic history (Gravida, Para, Menopausal status) -Preoperative Gynecologic symptoms (bleeding, discharge, pain, etc.) -Current gynecologic symptoms (bleeding, discharge, pain etc.)	-Prior Gynecologic history (Gravida, Para, Menopausal status) -Postoperative patients: preoperative Gynecologic symptoms (bleeding, discharge, pain, etc.) -Current gynecologic symptoms (bleeding, discharge, pain etc.)	/5
	Relevant physical findings	-Pelvic Exam -Palpation of inguinal lymph nodes in patients with lower vaginal involvement	-Pelvic Exam -Palpation of inguinal lymph nodes in patients with lower vaginal involvement	-Pelvic Exam -Assessment of inguinal lymph nodes	/5
	Appropriate staging	-Documentation of extent of disease involvement (cervix, vagina, parametria etc.) -CT, MRI, CXR, bone scan when appropriate	-Documentation of extent of disease involvement (cervix, vagina, parametria etc.) -CT, MRI, CXR, bone scan when appropriate	-Extent of disease involvement (vulva, vagina, cervix, parametria etc.) -CT, MRI, CXR, bone scan when appropriate	/5
	Pathology report/Surgical reports/Laboratory reports	-Biopsy results (grade, histology etc.) -Current Hemoglobin level (cervical cancer) -Renal Function (locally advanced cervical cancer)	-Biopsy results (grade, histology etc.) -Surgical Pathology results (grade, myometrial invasion, number and sites of lymph nodes sampled/dissected, cervical involvement and invasion, extrauterine involvement, etc)	-Biopsy results (grade, histology, etc.) of primary and regional lymph nodes if performed	/5
	Appropriate patient selection for treatment/ Discussion of options	-Type of RT (external beam, brachytherapy, both) based on disease, stage etc.) -Surgery if appropriate based on stage (early stage) and co-morbidities -Chemotherapy if appropriate based on stage (locally advanced cervical cancer) and co-morbidities	-Type of adjuvant RT (external beam, brachytherapy, both) based on stage and surgery performed -Chemotherapy if appropriate (node positive, margin positive, parametrial positive cervical cancer)	-Type of RT (external beam, brachytherapy, both) based on disease, stage etc. -Surgery and/or chemotherapy if appropriate	/5
SIMULATION	Appropriate consent form listing side effects	Depend on type of radiotherapy delivered (external beam, brachytherapy or both) <u>Acute Side Effects</u> -Fatigue -Urinary symptoms (frequency, dysuria) -Bowel symptoms (loose stools, frequency, bleeding) -Skin (redness, dryness, etc.) -Hematologic (if receiving chemotherapy) <u>Chronic Side Effects</u> -Urinary symptoms (frequency, dysuria, bleeding, fistula, etc.) -Bowel symptoms (loose stools, pain, bleeding) -Sexual symptoms (dryness, dyspareunia, inferitility-if appropriate) -Second malignancy risk	Depend on type of radiotherapy delivered (external beam, brachytherapy or both) <u>Acute Side Effects</u> -Fatigue -Urinary symptoms (frequency, dysuria) -Bowel symptoms (loose stools, frequency, bleeding) -Skin (redness, dryness, etc.) -Hematologic (if receiving chemotherapy) <u>Chronic Side Effects</u> -Urinary symptoms (frequency, dysuria, bleeding, fistula, etc.) -Bowel symptoms (loose stools, pain, bleeding) -Sexual symptoms (dryness, dyspareunia, inferitility-if appropriate) -Second malignancy risk	Depend on type of radiotherapy delivered (external beam, brachytherapy or both) <u>Acute Side Effects</u> -Fatigue -Urinary symptoms (frequency, dysuria) -Bowel symptoms (loose stools, frequency, bleeding) -Skin (redness, dryness, etc.) -Hematologic (if receiving chemotherapy) <u>Chronic Side Effects</u> -Urinary symptoms (frequency, dysuria, bleeding, fistula, etc.) -Bowel symptoms (loose stools, pain, bleeding) -Sexual symptoms (dryness, dyspareunia, infertility-if appropriate) -Second malignancy risk	/5
	Appropriate treatment plan note	-External beam vs. brachytherapy vs. both -Chemotherapy for locally advanced cervical cancer -if brachytherapy, intracavitary vs interstitial -If brachytherapy is indicated but not technically feasible or not possible, the reasons need to be described in the chart	-External beam vs. brachytherapy vs. both -Chemotherapy if appropriate (node positive, margin positive, parametrial involved cervical cancer) -if brachytherapy, intracavitary vs interstitial -If brachytherapy is indicated but not technically feasible or not possible, the reasons need to be described in the chart	-External beam vs. brachytherapy vs. both -Chemotherapy if appropriate -if brachytherapy, intracavitary vs interstitial -If brachytherapy is indicated but not technically feasible or not possible, the reasons need to be described in the chart	/5

GYNECOLOGIC CANCER CHART REVIEW (page 2)

	Review Criteria	Intact Cervix/Uterine	Postop Cervix/Uterine	Vulva/Vagina	Points
SIMULATION cont.	Appropriate simulation note/process	Depend on type of radiotherapy delivered (external beam, brachytherapy or both) External Beam: CT or conventional, customized immobilization, vaginal marker(s), etc., setup documentation Brachytherapy CT or conventional	Depend on type of radiotherapy delivered (external beam, brachytherapy or both) External Beam: CT or conventional, customized immobilization, vaginal marker(s), etc., setup documentation Brachytherapy CT or conventional	Depend on type of radiotherapy delivered (external beam, brachytherapy or both) External Beam: CT or conventional, customized immobilization, vaginal marker(s), etc., setup documentation Brachytherapy CT or conventional	/5
TREATMENT PLANNING	Appropriate dose and fractionation	Depend on type of radiotherapy delivered (external beam, brachytherapy or both) External Beam: 39.6-50.4 Gy in 1.8-2 Gy fractions Brachytherapy: ABS guidelines	Depend on type of radiotherapy delivered (external beam, brachytherapy or both) External Beam: 39.6-50.4 Gy in 1.8-2 Gy fractions Brachytherapy: ABS guidelines	Depend on type of radiotherapy delivered (external beam, brachytherapy or both) External Beam: 39.6-50.4 Gy in 1.8-2 Gy fractions Brachytherapy: ABS guidelines	/5
	Appropriate dose constraints	Normal tissue dose constraints are appropriate	If IMRT utilized, planning dose constrains listed and appropriate Normal tissue dose constraints are appropriate	If IMRT utilized, planning dose constrains listed and appropriate Normal tissue dose constraints are appropriate	/5
	Appropriate treatment volume and/or fields	Depend on type of radiotherapy delivered (external beam, brachytherapy or both) External Beam: Pelvis vs. Extended field vs Pelvic/inguinal depending on disease involvement Brachytherapy: ABS guidelines	Depend on type of radiotherapy delivered (external beam, brachytherapy or both) External Beam: Pelvis vs. Extended field vs Pelvic/inguinal Brachytherapy: ABS guidelines	Depend on type of radiotherapy delivered (external beam, brachytherapy or both) External Beam: Pelvis vs Pelvic/inguinal depending on disease extension (lower vaginal involvement necessitates inguinal nodal irradiation) Brachytherapy: ABS guidelines	/5
	Appropriate treatment technique	Depend on type of radiotherapy delivered (external beam, brachytherapy or both) External Beam: 2 or 4 conventional fields; 5-9 IMRT Brachytherapy: ABS guidelines	Depend on type of radiotherapy delivered (external beam, brachytherapy or both) External Beam: 2 or 4 conventional fields; 5-9 IMRT Brachytherapy: ABS guidelines	Depend on type of radiotherapy delivered (external beam, brachytherapy or both) External Beam: 2 or 4 fields (various boosting techniques for involved nodes), IMRT 5-9 fields Brachytherapy: ABS guidelines	/5
	Appropriate contouring	Depend on treatment approach IMRT: CTV and PTV (consensus guidelines), GTV optional Conventional external beam: None required Brachytherapy: If volume directed include GEC-ESTRO targets	Depend on treatment approach IMRT: CTV and PTV (consensus guidelines), GTV optional Conventional external beam: None required Brachytherapy: None required	Depend on treatment approach IMRT: CTV and PTV (consensus guidelines), GTV optional Conventional external beam: None required Brachytherapy: None required	/5
	Appropriate dosimetry	DVH/isodose distribution/dose constraints appropriate. Plan signed and dated.	DVH/isodose distribution/dose constraints appropriate. Plan signed and dated.	DVH/isodose distribution/dose constraints appropriate. Plan signed and dated.	/5
TREATMENT	Appropriate treatment verification	-Verification/portal imaging on 1st day and then a minimum of weekly -Daily on-line imaging if performed	Verification/portal imaging on 1st day and then a minimum of weekly -Daily on-line imaging if performed	Verification/portal imaging on 1st day and then a minimum of weekly -Daily on-line imaging if performed	/5
	Weekly on-treatment documentation/daily dose log/physics chart reviews	Performed	Performed	Performed	/5
	Chart rounds/Case peer review	Performed	Performed	Performed	/5
SUMMARY	Treatment summary	Signed and sent to referring physicians	Signed and sent to referring physicians	Signed and sent to referring physicians	/5
	Follow-up plan	Documented	Documented	Documented	/5
	Overall appropriateness of care				/5

HEAD & NECK CANCER CHART REVIEW

	Review Criteria	Definitive ChemoRT or RT	Post-Operative ChemoRT or RT	Points
H & P	Relevant history stated	Duration of symptoms. Alcohol and tobacco history and current usage detailed.	Duration of symptoms. Alcohol and tobacco history and current usage detailed.	/5
	Relevant physical findings	Full H&N exam including indirect mirror exam or fiberoptic exam. Review of prior video stroboscopy allowed.	Full H&N exam including statement regarding current state of post-operative healing.	/5
	Appropriate staging	TNM stage shall be based on all available data including from physical exam and CT scan. PET information if available. MRI if clinically indicated.	T and N stage confirmed by pathology report.	/5
	Pathology report/Surgical reports	Diagnosis of malignancy confirmed by biopsy	Histology, size of primary tumor, margin status, size, number and location of involved nodes, presence of extracapsular extension, LVSI, perineural invasion.	/5
	Appropriate patient selection for treatment/ Discussion of options	If appropriate, was surgery first or induction chemotherapy discussed as possible treatment options?	If chemotherapy given, are the indications given: positive surgical margins, extracapsular extension, other?	/5
SIMULATION	Appropriate consent form listing side effects	Mucositis, xerostomia, Altered taste/smell, Hoarseness, Skin erythema, Alopecia, Ear pain and/or pressure, Fatigue, Weight loss, Loss of teeth, cavities, hypersensitivity of teeth thyroid dysfunction, Damage to spinal cord, nerves in neck, jawbone, voicebox, skin, or other parts of head and neck that could require surgical correction, Brachial Plexopathy, Breathing problems, Difficulty with swallowing or eating that may require a long term or permanent feeding tube, Possibility of inhaling food and/or liquids into the lungs which could result in pneumonia Serious ear infections and/or hearing loss, Damage to the spinal cord leading to permanent weakness and/or symptoms like a stroke	Mucositis, xerostomia, Altered taste/smell, Hoarseness, Skin erythema, Alopecia, Ear pain and/or pressure, Fatigue, Weight loss, Loss of teeth, cavities, hypersensitivity of teeth thyroid dysfunction, Damage to spinal cord, nerves in neck, jawbone, voicebox, skin, or other parts of head and neck that could require surgical correction, Brachial Plexopathy, Breathing problems, Difficulty with swallowing or eating that may require a long term or permanent feeding tube, Possibility of inhaling food and/or liquids into the lungs which could result in pneumonia Serious ear infections and/or hearing loss, Damage to the spinal cord leading to permanent weakness and/or symptoms like a stroke	/5
	Appropriate treatment plan note	Definition of what is to be included in the PTV high dose and elective dose. Plans on using chemotherapy. Rationale for using IMRT if done.	Definition of what is to be included in the PTV high dose and elective dose. Plans on using chemotherapy. Rationale for using IMRT if done.	/5
	Appropriate simulation note/process	CT-based, slice thickness of ≤3mm, images from top of head to carina. Set up documentation.	CT-based, slice thickness of ≤3mm, images from top of head to carina. Set up documentation.	/5
TREATMENT PLANNING	Appropriate treatment prescription	PTV high dose shall receive at least 70 Gy in at least 2 Gy per fraction and elective dose shall be at least 56 Gy in at least 1.6 Gy per fraction in most cases; or the altered fractionation equivalent. At least 95% of the PTV shall receive prescribed dose.	PTV high dose shall receive at least 60-66 Gy in at least 2 Gy per fraction and elective dose shall be at least 1.6 Gy per fraction in most cases; or the altered fractionation equivalent. At least 95% of the PTV shall receive prescribed dose.	/5
	Appropriate dose constraints (if IMRT)	Follow RTOG 0522.	Follow RTOG 0522 guidelines note that this was not a post-op study; however, constraints will still be the same.)	/5
	Appropriate treatment technique	Follow RTOG 0522.	Follow RTOG 0522 guidelines.	/5
	Appropriate contouring	Follow RTOG 0522.	Follow RTOG 0522 guidelines.	/5
	Appropriate treatment fields	Follow RTOG 0522.	Follow RTOG 0522 guidelines.	/5
TREATMENT	Appropriate dosimetry	DVH/isodose distribution/dose constraints.	DVH/isodose distribution/dose constraints.	
	Appropriate treatment verification	Port films at least weekly. Daily imaging if margins less than 3 mm used.	Port films at least weekly. Daily imaging if margins less than 3 mm used.	/5
	Weekly on-treatment documentation/daily dose log/physics chart reviews	Performed	Performed	/5
	Chart rounds/Case peer review	Performed	Performed	/5
SUM	Treatment summary	Completed	Completed	/5
	Follow-up plan	Completed	Completed	/5
	Overall appropriateness of care			/5

INTRALUMINAL CHEST BRACHYTHERAPY CHART REVIEW

	Review Criteria	ENDOBRONCHIAL	ENDOESOPHAGEAL	Points
H & P	Relevant history stated	Current/Presenting Pulmonary Symptoms (Cough, Dyspnea, Hemoptysis, Pneumonia, Pleural effusion, Chest Pain, Shoulder and Arm Pain, Horner's syndrome, Hoarseness, SVC, Systemic symptoms (weight loss, anorexia, fatigue, band-like pain, hypertrophic osteoarthropy) Tobacco history	Current/Presenting Upper GI Symptoms (Dysphagia, Odynophagia, Chest pain, Pulmonary symptoms indicative of aspiration Systemic symptoms (weight loss, anorexia, fatigue) Gastroesophageal reflux (GERD) Tobacco history	/5
	Relevant physical findings	Chest Exam incl. H&N, LNs	Chest Exam incl. H&N, LNs	/5
	Appropriate staging	CXR, CT, PFTs, MRI when appropriate, PET Scan when appropriate.	CXR, CT, PFTs, MRI when appropriate, PET Scan when appropriate.	/5
	Pathology/Surgical/ Endoscopy reports	Appropriate documentation of primary and or tissue	Appropriate documentation of primary and or tissue	/5
	Appropriate patient selection for treatment/Discussion of options	Type of RT (external beam, brachytherapy) based on disease, stage etc. Surgery if appropriate based on stage (early stage) and co-morbidities Chemotherapy if appropriate based on stage and co-morbidities	Type of RT (external beam, brachytherapy) based on disease, stage etc. Surgery if appropriate based on stage (early stage) and co-morbidities Chemotherapy if appropriate based on stage and co-morbidities	/5
SIMULATION	Appropriate consent form listing side effects	endoscopy risks brachytherapy applicator risks fatigue esophagitis increased pulmonary symptoms including cough radiation pneumonitis	endoscopy risks brachytherapy applicator risks fatigue esophagitis increased pulmonary symptoms including cough radiation pneumonitis	/5
	Appropriate treatment plan note	Rationale for intended dose/fractionation, technique	Rationale for intended dose/fractionation, technique	/5
	Brachy catheter/applicator placement procedure note	Procedure note present and signed)	Procedure note present and signed)	/5
	Appropriate simulation note/process	CT-based or plane films simulation & documentation Prior radiation therapy reviewed	CT-based or plane films simulation & documentation Prior radiation therapy reviewed	/5
TREATMENT PLANNING	Appropriate treatment prescription	Brachytherapy:1-6 fractions 2.0-12.0 Gy per fraction. Rx. depth (surface or 1-10 mm etc.) No EBRT - Day of brachytherapy	Brachytherapy:1-6 fractions 2.0-12.0 Gy per fraction. Rx. depth (surface or 1-10 mm etc.) No EBRT - Day of brachytherapy	/5
	Appropriate dose constraints:	Spinal cord total dose considered and recorded	Spinal cord total dose considered and recorded	/5
	Appropriate treatment technique	Bronchoscopy guidance or evaluation	Bronchoscopy guidance or evaluation	/5
	Appropriate contouring	Normal tissues: spinal cord delineated	Normal tissues: spinal cord delineated	/5
	Appropriate dosimetry	2D Point Dose or 3D DVH/isodose/dose constraints.	2D Point Dose or 3D DVH/isodose/dose constraints.	/5
TREATMENT	Appropriate treatment verification	HDR treatment delivery documentation	HDR treatment delivery documentation	/5
	Physics chart check & total dose to date summations	Performed	Performed	/5
	Chart rounds/Case peer review	Performed	Performed	/5
SUM	Treatment summary	Complete and signed	Complete and signed	/5
	Follow-up plan	Documented	Documented	/5
	Overall appropriateness of care			/5

LUNG CANCER CHART REVIEW

	Review Criteria	Non-Small Cell Lung Cancer (NSCLC)	Small Cell Lung Cancer (SCLC)	Points
H & P	Relevant history stated	Current/Presenting Thoracic Symptoms (Cough, Dyspnea, hemoptysis, pneumonia, pleural effusion, chest pain, shoulder and arm pain, horner's syndrome, hoarseness, SVC, Systemic symptoms (weight loss, anorexia, fatigue, pain (band like), hypertrophic osteoarthropy) Tobacco History	Current/Presenting Thoracic Symptoms (Cough, Dyspnea, hemoptysis, pneumonia, pleural effusion, chest pain, shoulder and arm pain, horner's syndrome, hoarseness, SVC, Systemic symptoms (weight loss, anorexia, fatigue, pain (band like), hypertrophic osteoarthropy) Tobacco History	/5
	Relevant physical findings	Thoracic Exam	Thoracic Exam	/5
	Appropriate staging	CXR, CT, PFTs, MRI when appropriate, PET Scan when appropriate.	CXR, CT, PFTs, MRI when appropriate, PET Scan when appropriate.	/5
	Pathology report/Surgical reports	Appropriate documentation of primary and or tissue	Appropriate documentation of primary and or tissue	/5
	Appropriate patient selection for treatment/ Discussion of options	Type of RT (external beam, brachytherapy) based on disease, stage etc. Surgery if appropriate based on stage (early stage) and co-morbidities	Type of RT (external beam, brachytherapy) based on disease, stage etc. Surgery if appropriate based on stage (early stage) and co-morbidities	/5
SIMULATION	Appropriate consent form listing side effects	Chemotherapy if appropriate based on stage and co-morbidities -skin changes redness, dryness hair loss in the area treated -fatigue -esophagitis -increased pulmonary symptoms including cough -radiation pneumonitis	Chemotherapy if appropriate based on stage and co-morbidities -skin changes redness, dryness hair loss in the area treated -fatigue -esophagitis -increased pulmonary symptoms including cough -radiation pneumonitis	/5
	Appropriate treatment plan note	Rationale for intended dose/fractionation, technique and concurrent use of chemotherapy.	Rationale for intended dose/fractionation, technique and concurrent use of chemotherapy.	/5
	Appropriate simulation note/process	CT-based, supine with a mobilization cast/ molded cradle, slice thickness of ≤3mm, images from at least thoracic inlet to below the liver. Set up documentation.	CT-based, supine with a mobilization cast/molded cradle, slice thickness of ≤3mm, images from at least thoracic inlet to below the liver. Set up documentation.	/5
TREATMENT PLANNING	Appropriate treatment prescription	External Beam: 59.4 -74 Gy in 1.8 Gy-2.0 Gy fractions	External Beam: 60-70 Gy in 2.0 Gy fractions (once a day) or 45 Gy (1.5 Gy BID)	/5
	Appropriate dose constraints:	If IMRT is utilized, planning directive with planning dose constrains is present. Lung DVH: V20 <35%, MLD <20 Gy Spinal Cord < 50 Gy	If IMRT is utilized, planning directive with planning dose constrains is present Lung DVH: V20 <40%, MLD <20 Gy Spinal Cord < 50 Gy if once a day Spinal Cord <41 Gy if twice a day radiation therapy	/5
	Appropriate treatment technique	Follow RTOG 0617 protocol.	Follow RTOG 0538 protocol.	/5
	Appropriate contouring	Normal tissues will be outlined as solid structures, including the lung, spinal cord, heart	Normal tissues will be outlined as solid structures, including the lung, spinal cord, heart	/5
	Appropriate treatment fields	Follow RTOG 0617 protocol.	Follow RTOG 0538 protocol.	/5
	Appropriate dosimetry	DVH/isodose distribution/dose constraints.	DVH/isodose distribution/dose constraints.	/5
TREATMENT	Appropriate treatment verification	Use support films/portal imaging on first day and then weekly. Cone Beam CT as indicated – if performed physician verification on set must be documented.	Use support films/portal imaging on first day and then weekly. Cone Beam CT as indicated – if performed physician verification on set must be documented.	/5
	Weekly on-treatment documentation/daily dose log/ physics chart reviews	Performed	Performed	/5
	Chart rounds/Case peer review	Performed	Performed	/5
SUM	Treatment summary	Complete and signed	Complete and signed	/5
	Follow-up plan	Documented	Documented	/5
	Overall appropriateness of care			/5

LUNG CANCER SBRT CHART REVIEW

	Review Criteria	Non-Small Cell Lung Cancer (NSCLC)	Points
H & P	Relevant history stated	Current/Presenting Thoracic Symptoms (Cough, Dyspnea, hemoptysis, pneumonia, pleural effusion, chest pain, shoulder and arm pain, horner's syndrome, hoarseness, SVC, asymptomatic) Systemic symptoms (weight loss, anorexia, fatigue, pain (band like), hypertrophic osteoarthropy) Tobacco History	/5
	Relevant physical findings	Thoracic Exam	/5
	Appropriate staging	CXR, CT, PFTs, MRI if appropriate, PET Scan if appropriate.	/5
	Pathology report/Surgical reports	Appropriate documentation of primary and or tissue if possible. If not possible documentation of such.	/5
	Appropriate patient selection for treatment/Discussion of options	Type of RT (external beam) based on disease, stage etc. Surgery evaluation if appropriate based on stage (early stage) and co-morbidities Chemotherapy if appropriate based on stage and co-morbidities	/5
SIMULATION	Appropriate consent form listing side effects	-skin changes redness, dryness hair loss in the area treated -fatigue -esophagitis -increased pulmonary symptoms including cough -radiation pneumonitis -rib fracture -damage to normal tissues	/5
	Appropriate treatment plan note	Rationale for intended dose/fractionation, technique.	/5
	Appropriate simulation note/process	CT-based, supine with a mobilization cast/molded cradle, slice thickness of ≤3mm, images from atleast thoracic inlet to bottom of lung. Set up documentation.	/5
TREATMENT PLANNING	Appropriate treatment prescription	External Beam: Appropriate Gy/ fraction	/5
	Appropriate dose constraints:	Depending on the fractionation scheme	/5
	Appropriate treatment technique	Follow RTOG 0813/1021/0618/0915 protocol. (as appropriate)	/5
	Appropriate contouring	Normal tissues will be outlined as solid structures, including the lung, spinal cord, heart If central tumor, great vessels and bronchial tree shall be contoured	/5
	Appropriate treatment fields	Follow RTOG 0813/1021/0618/0915 protocol. (as appropriate)	/5
	Appropriate dose/fractionation	Appropriate Gy per fraction.	/5
	Appropriate dosimetry	DVH/isodose distribution/dose constraints.	/5
TREATMENT	Appropriate treatment verification	Cone Beam CT or appropriate imaging as indicated – if performed physician verification on set must be documented.	/5
	Weekly on-treatment documentation/daily dose log/physics chart reviews	Performed	/5
	Chart rounds/Case peer review	Performed	/5
SUMMARY	Treatment summary	Documented	/5
	Follow-up plan	Documented	/5
	Overall appropriateness of care		/5

LYMPHOMA/SARCOMA CANCER CHART REVIEW (page 1)

	Review Criteria	Hodgkin's and Non-Hodgkin's Lymphoma	Sarcoma	Points
H & P	Relevant history stated	"B" symptoms (fever, night sweats, weight loss) dyspnea, anorexia, ETOH intolerance, pruritis, fatigue, performance status, unfavorable prognostic factors (e.g. bulky disease, ESR>50, > 3 lymphoid regions, "B" symptoms, >1 extra nodal site, age, sex, Stage IV, Albumin <4, Hgb<10.5, WBC >15,000, lymphocytopenia, etc as appropriate for specific disease)	Multidisciplinary team approach Relevant history documented ex. location, size, symptoms/duration, type, grade	/5
	Relevant physical findings	Weight, Examination of lymph nodal regions, spleen, liver	Examine site of involvement and lymphoid regions	/5
	Appropriate work-up and staging evaluation	CBC, differential, platelets, ESR, LDH, LFT, albumin, creatinine, appropriate imaging (e.g. chest X-ray, CT, PET-CT)	MRI, CT, PET may be useful in prognosis, grading, determination of chemo response. Consider MRI of spine for mixoid/round cell liposarcoma Consider CNS imaging for alveolar soft part and angiosarcoma	/5
	Pathology report/Surgical reports	Clearly identified diagnosis (e.g. B-cell non-Hodgkin lymphoma, T-cell lymphoma, Hodgkin disease, etc) WHO, REAL or other classification system report of histology, including grade. Bone marrow biopsy report.	Site, Diagnosis/histology (e.g. WHO classification), tumor depth, size, grade, necrosis, margin status, biopsy technique, surgical procedure, margin status, surgical clips, drain location, lymph node status, etc. Molecular/cytogenetic analysis	/5
	Appropriate patient selection for treatment/ Discussion of options Appropriate consent form listing side effects	Selection: HD: Stage I-II favorable nonbulky if CMT: ISRT 20-30 Gy (20 Gy if no/min residual uptake on PET after 2 cycles; 30 Gy if +uptake) HD Stage I-II unfavorable nonbulky: ISRT 20-30 Gy HD Stage I-II unfavorable bulky: ISRT 30-36 Gy HD Stage III-IV: ISRT to initial bulky or residual PET + disease 30-36 Gy Age-adjusted IPI, FLIPI, MIPI or some other prognostic index when appropriate. Statement of favorable vs. unfavorable, bulky vs. non-bulky, etc. Post chemotherapy PET-CT for Hodgkin lymphoma. Statement of CR/PR/SD response to chemo. Documentation of discussion regarding potential side effects: fatigue, Lhermittes syndrome, decreased blood counts, risk to organs (e.g., heart, lungs, etc.) and second malignancy Pregnancy test (women of childbearing age) and semen preservation counseling (if appropriate) before undergoing treatment	Resectable vs. unresectable, Pre-op vs. Post-op, Brachy, IORT, XBRT Combined modality/multidisciplinary review If appropriate, statement that RT does not substitute for suboptimal surgical resection – re-excision may be necessary.	/5
	Treatment Planning	CT based treatment planning (as clinically appropriate for specific anatomical location and histology)	CT based treatment planning Consider utilizing MRI data for delineation of region of interest	/5
	Appropriate treatment plan note	Combined modality vs. RT alone, etc.	Pre-op vs. post-op, planned boost, etc.	/5
	Appropriate simulation note/process	Set up documentation.	Set up documentation.	/5
TREATMENT PLANNING SIMULATION	Appropriate treatment prescription	Treatment prescription: HD: Stage I-II favorable nonbulky if CMT: ISRT 20-30 Gy (20 Gy if no/min residual uptake on PET after 2 cycles; 30 Gy if +uptake) HD Stage I-II unfavorable nonbulky: ISRT 20-30 Gy HD Stage I-II unfavorable bulky: ISRT 30-36 Gy HD Stage III-IV: ISRT to initial bulky or residual PET + disease 30-36 Gy Guidelines acknowledging consensus to smaller fields for consolidation. NHL: Involved field vs. regional field vs. extended field. Note current guidelines nationally (ex NCCN) for ISRT or smallest appropriate fields for normal tissue sparing. RT alone rarely used for CHL, but more common in LPHL. For RT alone, 30-36 Gy to involved regions – 24-30 Gy to uninvolved. If combined therapy, 20- 30 Gy for non-bulky, 30-36 Gy for bulky.	Dose considerations: Preoperatively: 50 Gy in 1.8-2.0 Gy per fraction. Consider boost vs observation for + margins at surgery. Options include EBRT to 16-18 Gy microscopic + margin vs 20-26 Gy gross residual; brachy LDR 16-18 Gy microscopic + margin vs 20-26 Gy gross residual; brachy HDR 14-16 Gy in fx of 3-4 Gy BID for microscopic + margins vs 18-24 Gy for gross residual disease; IORT 1-=12.5 Gy for microscopic + margins vs 15 Gy for gross residual disease. Postoperatively: 60-66 Gy in 1.8-2.0 Gy fractions (initial margin~5 cm proximal and distal with 2 cm radial anatomically constrained to ~50 Gy, then boost of tumor bed with 1.5-2 cm margin proximal and distal to ~60 Gy negative margins and ~66 Gy positive margins; may consider hypofx for negative margins (ex. 36 Gy/10 fx/5 days brachy).	/5

LYMPHOMA/SARCOMA CANCER CHART REVIEW (page2)

	Review Criteria	Hodgkin's and Non-Hodgkin's Lymphoma	Sarcoma	Points
TREATMENT cont.	Appropriate dose constraints	(As clinically appropriate for specific anatomical location and histology)	(As clinically appropriate for specific anatomical location and histology)	/5
	Appropriate treatment technique	(As clinically appropriate for specific anatomical location and histology)	(As clinically appropriate for specific anatomical location and histology)	/5
	Appropriate contouring	(As clinically appropriate for specific anatomical location and histology)	(As clinically appropriate for specific anatomical location and histology)	/5
	Appropriate treatment fields	(As clinically appropriate for specific anatomical location and histology)	Consider more advanced radiation treatment planning/treatment to improve therapeutic effect.	/5
	Appropriate dosimetry	DVH/isodose distribution/dose constraints in chart	DVH/isodose distribution/dose constraints in chart	/5
	Appropriate treatment verification	Documentation that on first or second day set up was reviewed before treatment course began. Use of regular portal imaging, port films, etc as appropriate (at least weekly).	Documentation that on first or second day set up was reviewed before treatment course began. Use of regular portal imaging, port films, cone beam CT, etc as appropriate (at least weekly).	/5
	Weekly on-treatment documentation/daily dose log/physics chart reviews	Appropriate documentation of number of fractions, dose per fraction, and total planned dose to designated target. Evidence that portal images, port films, etc, have been reviewed. Physics confirmation of treatment parameters and doses	Appropriate documentation of number of fractions, dose per fraction, and total planned dose to designated target. Evidence that portal images, port films, cone beam CT, etc, have been reviewed. Physics confirmation of treatment parameters and doses	/5
	Chart rounds & Case peer review	Documented	Documented	/5
SUMMARY	Treatment summary	Dose per fraction, number of fractions, total dose to target, and brief clinical summary Signed and sent to referring physicians	Dose per fraction, number of fractions, total dose to target, and brief clinical summary Signed and sent to referring physicians	/5
	Follow-up plan	Documented	Documented. Eval for rehabilitation if appropriate (OT, PT),	/5

NEURO-ONCOLOGY CHART REVIEW (page 1)

	Review Criteria	Primary CNS tumor	Metastatic CNS tumor	Points
H & P	Relevant history stated	KPS Neurological status pre and post op Prior Radiation Neuro deficits at presentation	KPS Status of primary (new/controlled) Prior Radiation Neuro deficits at presentation	/5
	Relevant physical findings	Detailed neurological exam including mini mental and if necessary Cognitive battery	Detailed neurological exam including mini mental and if necessary Cognitive battery	/5
	Appropriate staging	MRI and CT scan both pre and post- op are available. Visual fields if relevant Audiogram if relevant	MRI brain with size and count of lesions, CT CAP and PET CT to complete staging	/5
	Pathology report/Surgical reports	Appropriate documentation of grade, 1p,19q deletion status M1B/Ki-67	Appropriate documentation of primary and or tissue from brain lesion	/5
	Appropriate patient selection for treatment/Discussion of options	Patient/indications appropriate for treatment. Treatment options discussed.	Patient/indications appropriate for treatment. Treatment options discussed.	/5
SIMULATION	Appropriate consent form listing side effects	-headache -nausea, vomiting -fatigue -hair loss -skin irritation -seizures -neurological deficits -endocrinopathies -cognitive decline -radiation necrosis	-headache -nausea, vomiting -fatigue -hair loss -skin irritation -seizures -neurological deficits -endocrinopathies -cognitive decline -radiation necrosis	/5
	Appropriate treatment plan note	Rationale for intended dose/fractionation, technique and concurrent use of chemotherapy. Mention of why alternates such as radiosurgery , repeat surgery were considered / do not apply	Rationale for intended dose/fractionation, technique and concurrent use of chemotherapy. Mention of why alternates such as radiosurgery , surgery were considered / do not apply	/5
	Appropriate simulation note/process	-immobilization -CT scan (with /w/o contrast) -appropriate indication of isocenter placement -timely signed simulation note	-immobilization -CT scan (with /w/o contrast) -appropriate indication of isocenter placement -timely signed simulation note	/5
TREATMENT PLANNING	Appropriate treatment prescription	Targeted GTV description is accurate: Ex: ***"GTV will include flair edema pre-op and enhancing tumor plus appropriate margins"*** 45-60 Gy based on indication 1.8 Gy -2 Gy per fraction.	The extent of coverage is defined: ***Ex: " Whole brain to C2 inferior border"*** 25 to 45 Gy depending on indication. in 2 Gy to 3 Gy per fraction. If 4 Gy used justify. **FOR SRS Follows separate scoring for SRS / Gamma Knife**	/5
	Appropriate dose constraints (if IMRT):	Brainstem 54 Gy Cerebellum – 50% 54 Gy Right Hemisphere - 50% 54 Gy Left Hemisphere - 50 % 54 Gy Spinal Cord 45 Gy Lacrimal + 3mm 36 Gy Lens 10 Gy Retina 45 Gy Optic Nerve 54 Gy Cochlea 45 Gy Parotid - 50% 30 Gy Optic Chiasm + 3mm 54 Gy	Brainstem 54 Gy Cerebellum – 50% 54 Gy Right Hemisphere - 50% 54 Gy Left Hemisphere - 50% 54 Gy Spinal Cord 45 Gy Lacrimal + 3mm 36 Gy Lens 10 Gy Retina 45 Gy Optic Nerve 54 Gy Cochlea 45 Gy Parotid - 50% 30 Gy Optic Chiasm + 3mm 54 Gy	/5
	Appropriate treatment technique	2D, 3D , IMRT and SRS techniques are chosen with documented rationale. Center has IMRT phantom , and SRS site accreditation on record.	2D, 3D , IMRT and SRS techniques are chosen with documented rationale. Center has IMRT phantom , and SRS site accreditation on record.	/5

NEURO-ONCOLOGY CHART REVIEW (page 2)

	Review Criteria	Primary CNS tumor	Metastatic CNS tumor	Points
TREATMENT PLANNING (cont.)	Appropriate contouring	Normal tissues will be outlined as solid structures, including the optic structures, pituitary gland, cochlea, brainstem, basal ganglia, cerebral hemispheres, cerebellum, parotids, spinal cord Optic Chiasm, brainstem and cochlea are accurately delineated. GTV/CTV/PTV are clearly indicated with: MR fusion (prefer computer based) CTV is edited to account for natural barriers such as bone PTV is institution and set up appropriate	Lenses, cribriform plate, inferior most extent of the temporal fossa are delineated for the block design. In slanted brain with eye block adequate coverage of these is ensured and lenses are blocked.	/5
	Appropriate treatment fields	Minimum of three fields for 3D and 5 for IMRT for full score.	Flash is adequate	/5
	Appropriate dosimetry	DVH/isodose distribution/dose constraints.	Beam descriptors, blocks and MLC's are accurate.	/5
TREATMENT	Appropriate treatment verification	Use support films/portal imaging on first day and then weekly. Cone Beam CT as indicated – if performed physician verification on set must be documented.	Use support films/portal imaging on first day and then weekly.	/5
	Weekly on-treatment documentation/daily dose log/ physics chart reviews	Reflects review of clinical effects, neuro exam, imaging if needed, screening for DVT and pain, dose point and lab work. Documents portal review and peer review.	Reflects review of clinical effects, neuro exam, imaging if needed, screening for DVT and pain, dose point and lab work. Documents portal review and peer review.	/5
	Chart rounds/ Case peer review	Document date of review and comments. 100% charts must be reviewed within first week and before treatment for single dose treatments	Document date of review and comments. 100% charts must be reviewed within first week and before treatment for single dose treatments	/5
SUMMARY	Treatment summary	Detailed summary : Cumulative dose, fields, target doses, start and end dates, concurrent chemotherapy and patient On treatment issues. Neurological status at completion.	Detailed summary : Cumulative dose, fields, target doses, start and end dates, concurrent chemotherapy and patient On treatment issues. Neurological status at completion.	/5
	Follow-up plan	Duration, frequency and documentation of neuro-oncology and neurosurgery follow up.	Duration, frequency and documentation of medical-oncology follow up.	/5
	Overall appropriateness of care			/5

PALLIATIVE CANCER CHART REVIEW

	Review Criteria	Palliative Treatment Site	Points
H & P	Relevant history stated	Current/Presenting symptoms (Cough, Dyspnea, hemoptysis, pneumonia, pleural effusion, chest pain, shoulder and arm pain, Horner's syndrome, hoarseness, SVC, bone pain bleeding, etc). Systemic symptoms (weight loss, anorexia, fatigue, pain (band like). Performance Status.	/5
	Relevant physical findings	Appropriate site specific Physical Exam.	/5
	Staging	Cancer stage documented. Appropriate imaging document.	/5
	Pathology report	Pathology report present.	/5
	Patient selection for treatment/ Discussion of options	Appropriate for palliation. Palliative intent documented. Other palliative measures as appropriate.	/5
SIMULATION	Consent form	Consent form signed and dated by patient and physician. Consent specific to region of treatment with side effects listed.	/5
	Treatment plan note	Treatment planning note present and defining palliative intent.	/5
	Simulation note/process	Set up documentation as appropriate to patient's disease site, performance status and expected palliation result.	/5
TREATMENT PLANNING	Treatment prescription	The fraction size and total dose shall be appropriate for palliation. The fraction size shall also be appropriate to the total dose. 800cGy in 1fx to 5500cGy in 21fx can be considered. Fraction sizes of 1.8-2.0 Gy or curative doses need special explanation.	/5
	Dose Constraints	Appropriate normal tissue dose constraints if applicable: Spinal cord Abdominal viscera H & N	/5
	Treatment technique	Appropriate for site treated	/5
	Contouring	Normal tissues contouring is optional but will be delineated if prescribed dose exceeds tolerance of these structures. Allow considerable leeway here as the need for comprehensive contouring less clear.	/5
	Treatment fields	Cover symptomatic disease as noted in HPI.	/5
	Treatment plan documentation	Treatment plan signed and dated by physician. DVH/isodose distribution/dose constraints appropriate if applicable.	/5
TREATMENT	Treatment verification	Use support films/portal imaging on first day and then weekly. If special imaging such as Cone Beam CT is performed, justification must be documented.	/5
	Weekly on-treatment documentation/daily dose log/physics chart reviews	Weekly on treatment visit documented with dose, symptoms, and focused physical exam. Daily dose log documented. Physics chart review documented.	/5
	Peer review	Prospective peer review document.	/5
SUMMARY	Treatment summary	Treatment summary present including: Site(s) treated; Technique; Radiation energy or source; Dose; Dose per fraction; Number of fractions; Dates treated and elapse days; Summary of treatment tolerance or acute side effects.	/5
	Follow-up plan	Follow up plan appropriate and documented.	/5
	Overall appropriateness of care		/5

III. FORMS

A. Application

The ACRO accreditation program has implemented technology developed by EqualEstro to create an online accreditation program. Consistent with a technologically advanced program, ACRO prefers online application for accreditation at http://acro.org/Accreditation/app.cfm. If a practice wishes to submit an application by mail or fax, a paper copy of the ACRO Application form on pp55 can be photocopied and used accordingly.

ACRO is now pleased to offer a four-year accreditation option in addition to the existing three-year term. Please note that at the current time, practices which contract with the VA to provide patient care may be required to undergo accreditation every three years. It is the responsibility of each practice to ensure compliance with VA regulations.

Fees for ACRO Accreditation and the Optional Service are presented below.

B. Rules for Accreditation Process Agreement

This agreement provides an overview of the accreditation program and the responsibilities of both ACRO and the practice. The rules document is available on pp56-57 and must be signed and submitted with the final invoice payment.

C. Sentinel Event Disclosure

The form available on page 58 must be submitted with the final invoice payment even if no sentinel events need reporting. The Joint Commission (TJC) defines a sentinel event as: ***"Prolonged fluoroscopy with cumulative dose >1500 rads to a single field or any delivery of radiotherapy to the wrong body region or >25% above the planned radiotherapy dose."***

The following must be reported in preparation for a practice evaluation:

1. Any medical events in the last three years.
2. Any events submitted to the NRC or State that are not considered medical events.
3. Any near miss event that might have caused a medical event.
4. Documentation on what the practice has done to prevent a reoccurrence of items 1, 2 and 3.
5. Documentation of any TJC listed items requiring correction.

D. FEE SCHEDULE	**Three Year Term**	**Four Year Term**
Principal Practice: practice headquarters (or main office)	**$9,000**	**$12,000**
Additional Practice: an additional practice is one that has a common medical director, a common physics director, a common physician peer review process, common and uniform treatment methods, uniform charts and forms and is located within a 50 mile radius of the principal practice. An additional practice may have no more than three linacs. A maximum of two additional practices is allowed for each principal practice. If an additional practice received Denied Accreditation and must reapply separately, a $5,000 fee is required.	**$3,500**	**$4,500**
Travel Costs:	**included**	**included**
Optional Service: Billing/Coding Documentation Compliance Mini-audit. Fee per practice selecting this optional service	**$2,000**	**$2,000**

APPLICATION FOR ACCREDITATION

TYPE OF ACCREDITATION:

☐ Initial Accreditation ☐ Re-Accreditation

LENGTH OF TERM:

☐ Three Year ☐ Four Year

Please see the Rules for Accreditation Process Agreement for more information about term lengths.

PRACTICE INFORMATION:

This information will be used to determine the appropriate fees and to setup an online profile for your practice's accreditation. Please be sure to enter the correct Practice Name and Practice Coordinator name as this information will be on all documents.

Practice Coordinator: This individual is the single point of contact with ACRO for the principal and all additional practices and coordinates all steps in the process.

Name: _____

Phone: _____

Fax: _____

Email: _____

Principal Practice: Practice headquarters (or main office)

Name: _____

Street Address: _____

City, State: _____

Zip: _____

ADDITIONAL PRACTICES:

- An additional practice is one that has a common medical director, a common physics director, a common physician peer review process, common and uniform treatment methods, uniform charts and forms and is located within a 50 mile radius of the principal practice. An additional practice may have no more than three linacs. A maximum of two additional practices is allowed for each principal practice.
- Travel fees for additional onsite surveys may apply

Name: _____

Street Address: _____

City, State Zip: _____

Name: _____

Street Address: _____

City, State Zip: _____

PAYMENT METHOD:

Payment must be in US dollars drawn on a bank in the United States, Visa, MasterCard, or American Express.

Please select your payment method. ☐ Check enclosed ☐ Visa ☐ MasterCard ☐ American Express

Credit Card Number: _____ Expiration Date: _____/_____ Month / Year

Billing Zip Code: _____ Security Code: _____

Name on Credit Card: _____ Signature: _____

Send check and application to: **American College of Radiation Oncology; ATTN: Accreditation Coordinator; 2001 Sixth Avenue, Suite 2700, Seattle, WA 98121**

FEE CALCULATION:

	No. of Practices		Three Year Term	Four Year Term		Subtotal
Principal Practice		x	☐ $9,000	☐ $12,000	=	
Additional Practice		x	☐ $3,500	☐ $4,500	=	
If Denied Reapplying		x	☐ $5,000	☐ $5,000	=	
Optional Service		x	☐ $2,000	☐ $2,000	=	
Total to submit to ACRO						

By signing this Application for Accreditation, the Practice agrees to the rules of the ACRO Accreditation program (pp56-57).

Signature: _____

For further information regarding the ACRO Accreditation Program, please contact: Accreditation Coordinator; 2001 Sixth Avenue, Suite 2700, Seattle, WA 98121; Phone: (206) 956-3642; Fax: (206) 441-5863; Email: info@acro.org

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Integrating Science and Technology into Patient Care

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RULES FOR THE ACCREDITATION PROCESS

1. A practice applying for accreditation must first:
   a. Submit an application form and fee to the ACRO office
   b. Identify the Practice Coordinator and his/her address
   c. Include in the initial application the address of the practice(s) to be accredited if different from the Practice Coordinator's address
   d. Submit a business associate agreement, with ACRO as the business associate, to be signed by both parties.

2. The ACRO Accreditation Coordinator will assign a username and password for the ACRO Accreditation Website after payment and a business associate agreement is signed by both parties. The Practice Coordinator will send a list of patients treated at the practice during the past 12 months. Twenty cases for a principal practice, and fifteen cases for an additional practice, will be selected for review by the ACRO Accreditation Disease Site Review Administrator.

3. The cases for medical chart review must be uploaded into the system and assigned before a site visit can be scheduled. This will help facilitate an onsite follow-up of any issues discovered in the chart review process. When uploading the charts, it is critical to follow the directions and submit only the required information. A list of the required chart information is attached. Failure to upload the chart information properly will result in significant delays in the accreditation process. The rules for medical chart review are:
   a. Of the 20 charts uploaded fifteen will be reviewed for each Principal Practice, and of the 15 charts submitted for an additional practice, 10 will be reviewed. An attempt to represent the patient mix of the practice will be made by the ACRO Staff when selecting charts to be reviewed. The reviews are scored against established chart review measures. The measures have been approved by the Disease Site Team Leaders and the ACRO Executive Committee and are included in the manual for ACRO Accreditation.
   b. **ACRO Accreditation recommends having a physician review the selected charts prior to submission to ensure they are complete pursuant to the guidelines.**
   c. Each chart is scored on a 100-point basis, with a score of 75 considered the minimum. To pass this section, the average chart score must be 80 or above and no more than two charts can have a score below 75 for a Principal practice. For an Additional practice, no more than one chart can have a score below 75. If either of these standards is not met, a recommendation for provisional accreditation will be given. If both of these standards are not met, then a recommendation of denied accreditation will be given.

4. The Practice Coordinator will complete the survey form on the Website. Once the information has been submitted and the medical charts have been assigned (see #3 above), a site visit for physics and administrative surveys will be scheduled. The Practice Coordinator will be notified of the names of the physicist and administrative surveyors for approval, so as to avoid conflict of interest by any parties.

5. When the Practice Coordinator approves the physicist and administrative surveyors, they will arrange for a site visit date directly with the Practice Coordinator. The site visit is to be scheduled for four to six weeks from the date of confirmation.

6. After the site visit has been completed, a physics and administrative report will be submitted to the ACRO office. The physics report is reviewed by the Physics Committee, chaired by the ACRO Medical Physicist, and a recommendation for full, provisional or denied accreditation is submitted to the ACRO Medical Director. The administrative report is reviewed by the ACRO Administrative Director, and a recommendation for full, provisional or denied accreditation is submitted to the ACRO Medical Director.

7. A recommendation of denied accreditation by any of the three reports (medical, physics, or administrative) will automatically result in Denied Accreditation, not subject to negotiation. A practice receiving Denied Accreditation is required to wait at least six months after implementing all of the corrective actions before reapplying for accreditation. All remedial action submissions follow #8 below before reapplication.

8. A recommendation of provisional accreditation by any of the three reports (medical, physics, or administrative) will automatically result in Provisional Accreditation, not subject to negotiation. Provisional Accreditation will be in effect for no more than one year. Remediation of the issues that caused Provisional Accreditation can be carried out any time during that year, and Full Accreditation can then be awarded upon satisfactory remediation of the issues for the balance of the three or four year term. To upgrade Provisional Accreditation to Full Accreditation the following conditions will apply:
   a. A recommendation for provisional accreditation based on the medical chart review will necessitate review of additional charts with a satisfactory score. For a Principal Practice, an additional twenty charts must be uploaded, fifteen of which are to be reviewed, after corrections have been implemented and meet the standards in #3 above. An additional fee of $1,500 will be charged for this review. For an Additional Practice, an additional fifteen charts must be uploaded, ten of which are to be reviewed. An additional fee of $1,000 will be charged for this review. If provisional is granted again, repeat this step with a 12 month extension.

b. A physics and/or an administrative recommendation for provisional accreditation can be upgraded to a recommendation for full accreditation with adequate demonstration and/or documentation of the required corrections. In unusual cases it may be necessary to schedule an additional site visit to verify the corrections made. This can be carried out at an additional cost to the practice. All necessary corrections must be documented sufficiently to substantiate the corrections. A simple statement that the required corrective actions have been implemented is insufficient.

9. ACRO Accreditation reserves the right to refuse a reapplication from any practice that has not, within the timeframe, remediated the issue(s) which resulted in provisional or denied status from an initial application. ACRO Accreditation will require documentation of corrected issue(s) from the first application in order for a reapplication to be accepted.

10. The accreditation decision is based upon the information submitted to ACRO Accreditation by the practice and the findings reported by the site surveyors. Significant changes in the practice, including turnover of key personnel, may affect the accreditation status, and must be reported to ACRO Accreditation by the Practice Coordinator. A change in practice ownership must be reported to ACRO Accreditation within 30 days of the transfer. Upon receipt of a notice of significant changes in the practice it will remain accredited during a review period, during which the Practice Coordinator will be asked to submit documentation of any changes in physician leadership, physics leadership, or practice policies and procedures. Following the review, ACRO Accreditation will promptly notify the Practice Coordinator of the accreditation status. If ACRO Accreditation determines there have been "substantive changes" to the practice, re-application for accreditation may be required.

11. To receive Full Accreditation, all three sectional recommendations (medical, physics, and administrative) must be for full accreditation.

12. All final recommendations for accreditation status (Full, Provisional, or Denied) submitted to the ACRO Executive Committee by the Medical Director, for final action on behalf of the ACRO Board of Chancellors, must be supported by the Physics Director and the Administrative Director.

13. If a practice rescinds its application, a refund (whether partial or full) is up to the sole discretion of the ACRO Accreditation Management Committee.

14. If a practice is legally required to hold accreditation and is in the process of a re-application, or is under review to be moved from Provisional to Full Status, then its expiration date can be extended to ensure a lapse is not as a result of delayed action by ACRO Accreditation. This will be clarified on a case-by-case basis with the ACRO Accreditation Management Committee.

15. It is the responsibility of each practice to ensure compliance with VA regulations when selecting a three or a four year term.

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SENTINEL EVENT DISCLOSURE FORM

Practice Name: _____

City, State, Zip Code: _____

No Disclosure Necessary

If there are no items to disclose, please check the box next to the statement below and sign at the end of the document.

☐ Our practice has reviewed the request for sentinel events, medical events, and misadministration. To our knowledge, we do not feel that any such episodes of care exist in our practice for your accreditation team to review.

Items for Disclosure

For any item that meets the requirements for disclosure, please list below. Attach the appropriate documentation of the incident as an addendum to this form.

1. Medical events:

a. _____

b. _____

c. _____

2. Events submitted to NRC or State and not considered medical events:

a. _____

b. _____

c. _____

3. Near miss events that might have caused a medical event:

a. _____

b. _____

c. _____

Practice Coordinator Signature: _____

Practice Coordinator Printed Name: _____

Date: _____

ACRO Accreditation is the only US accrediting body in radiation oncology to have achieved ISO 9001:2015 certification.

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W: acro.org/Accreditation