



February 26, 1998

Cynthia D. Pederson, Director
Division of Nuclear Materials Safety
U.S. Nuclear Regulatory Commission
Region III
801 Warrenville Road
Lisle, Illinois 60532-4351

**SUBJECT: RESPONSE TO AN APPARENT VIOLATION
IN INSPECTION REPORT 030-00407/98001(DNMS)**

License NO. 34-02007-02
Docket NO. 030-00407

Dear Ms. Pederson:

This letter is to respond the apparent violations addressed in NRC inspection report (030-00407/98001(DNMS) which was conducted on January 5-6, 1998.

(1) The reasons for the apparent violations

As part of the investigation the MedCentral Cobalt-60 teletherapy Quality Management Program was reviewed by the inspector and it was concluded that a failure to follow procedures and carry out the Quality Management Program was factors that have contributed to the occurrence of the reported misadministration. In addition, a competency evaluation for the therapists on the Quality Management Program to ensure their understanding of requirements of the Quality Management program and procedures would have helped to assure compliance with the program.



The failure to notify the NRC of changes to our Quality Management Program is due to the change of the format and appearance in the Quality Management Program. We did not submit the program according to reporting schedule because the details and contents did not decrease the effectiveness of the program. The inspector pointed out to us that any modification shall

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Shelby Hospital - Morris Road, Shelby, OH 44875-0608 - Phone (419) 342-5015

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submit to the NRC within 30 days after modification. As now we are aware of the totality of the requirement, we will send future modification to the NRC for review

(2) The corrective steps that have been taken and the results achieved:

(A) A checklist has been initiated for the therapists for daily treatment checkup as part of the requirement in 10 CFR 35.25 (2). This checklist is part of the treatment chart and completed during simulation or machine setup. In this checklist, Items 1,2, and 3 in the New Patient Chart Review will be checked and completed by the therapists before patient treatment. For a new patient, the treatment will not be delivered, if "NO" is checked in the Item 3. For a patient who is under treatment and has modification of field size or treatment technique, the treatment will not be delivered if "NO" is checked in the Item 3. If "YES" is checked in the Item 3, the therapists will check the written directive on the last treated fields to ensure the completeness of the written directive of the last treatment. For a patient who has a newly added area to be treated, the treatment will not be delivered if "NO" is checked in the Item 3. If "YES" is checked in the Item 3, the therapists will check the written directive on the original area to ensure there is no confusion between the two treated areas.

(B) The policy for calculation check is printed on the checklist to remind the therapists of the required time limits for calculation check. Therapists also were instructed to give the chart to the physicist in person and not leave the chart in the file basket in the department. After the calculation is checked, the physicist will initial and date the checklist. The therapists will give the chart to the physicist every five treatment days. The physicist will make a note in the checklist to indicate the last treatment according to the written directive.

(C) A treatment prescription summary has been used by the physicist for implementation of the written directives as part of requirement in 10 CFR 35.25 (2). The summary is part of the treatment chart and available before treatment simulation or machine setup. The physicist will complete the summary, so that this summary will be used as "second pair of eyes" to review the written directives. The physicist will perform the dose calculation check which will be printed on the back of the summary. The summary will be used as a checklist to ensure implementation of the written directives.

3) The corrective steps that will be taken to avoid further violations:

(A) The teletherapy Cobalt-60 Quality Management Program for MedCentral Health System has been revised to include procedures to carry out the written directives mentioned in (1) and (2). A copy of the revised QMP is included with this reply. Portions of this QMP were implemented effective February 2, 1998.

(B) . The teletherapy Cobalt-60 Quality Management Program for MedCentral Health System has been finalized. A copy of the revised QMP is included with this reply. The revised QMP was fully implemented effective February 25, 1998.

(C) The training on the purposes of the QMP was done on February 18 & 19, 1998. The training was given by the consultant of the National Physics Consultants, Ltd. The training on the procedures to carry out the QMP was on February 25, 1998. The training was given by the Radiation Safety Officer to all therapists and the authorized user. The staff were notified of the apparent violation and the applicable corrective actions to prevent future recurrences. The policies in the modified Quality Management Program have been discussed and the procedures in the modified program have been gone through in detail. After the training session, a competency test was given to all therapists to ensure understanding of requirements and procedures in the Quality Management Program. The material from the competency test is enclosed in this reply. The training will be held quarterly in 1998 to ensure all therapists have adequate training on the QMP.

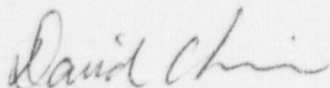
(D) We have created a policy to evaluate therapists as part of requirement in 10 CFR35.25 (3) (b). Therapists signed and dated the policy to document their awareness of it. The policy was implemented effective February 25, 1998.

(E) The checklist will be checked by the physicist immediately before the treatment or immediately after treatment, or once every five treatment days, or on the completion of the treatment. The checklist records the process to carry out the Quality management Program and ensure its correct implementation. If any unintended deviation is found, it will be documented on the back page of the checklist. The unintended deviation will be evaluated according to the policy/procedure "To carry out the evaluation and record the unintended deviation", of the Quality Management Program,

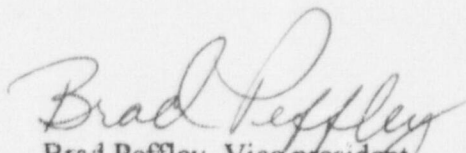
(F) The treatment prescription summary provides a mechanism to review the written directive. The summary will be completed by the physicist as part of the dose calculation check. Two objectives will be accomplished in this review: to confirm that the written directive is correctly followed and implemented, and to ensure that the authorized user has provided a clearly written directive which is signed and dated.

(4). Full compliance was achieved effective February 25, 1998.

Sincerely,



David Y. Chin, Ph.D.
Radiation Safety officer
MedCentral Health System



Brad Peffley, Vice president
MedCentral Health System

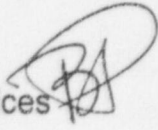
Enclosures: 1. Revised Quality Management Program
2. 1998 QMP Training Program

cc w/encls: John Madera, Chief
Mmaterials

MedCentral Health System

MEMORANDUM

TO: Dr. Koh, Medical Director
Radiation Therapy Staff

FROM: Brad Peffley, Vice President Clinical Services 

DATE: February 20, 1998

SUBJECT: Revised QMP

I have reviewed the revised Quality Management Plan and understand along with you the importance of following it for the highest quality patient care and as required by regulation. I appreciate your support and hard work and am confident that working together we can continue to provide high quality patient care and make our program even better for the patients we serve.

:cm

GENERAL INFORMATION

Date: February 18 & February 25, 1998

Location: Radiology Conference Room

Program Conducted by: David Y. Chin, Ph. D.
Radiation Safety Officer
MedCentral Health System

David Close
Consultant
Nation Physics Consultant, Inc.

Program Arranged by: Angela Scott, R.T. (T)
Supervisor

Attendance:

Name	Signature	Date	Test Score*	Re-take Score**
Angela Scott	Angela Scott	2-25-98	93%	
Hilary Adkins	Hilary Adkins	2-25-98	100%	
Denise Mahler	Denise Mahler	2-25-98	100%	
Linda Harbaugh	Linda Harbaugh	2-25-98	93%	

* The score must be above 90% to pass.

** The re-take score must be 100% to pass.

For all new employed therapists each individual must have the QMP training and pass the competence test before assigning duty of patient treatment.

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Program Conducted by: David Y. Chin, Ph. D.
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For all new employed therapists each individual must have the QMP training and pass the competence test before assigning duty of patient treatment.

Wednesday - 18 February 1998

Radiology Conference Room

11:30 - 12:30

Purpose of the QMP
David Close
National Physics Consultant

Wednesday - 25 February 1998

Radiology Conference Room

12:30

Introduction
Angela Scott, R.T. (T)

Session 1:

12:35 - 12:55

United states Nuclear Regulatory Commission Training Tape
Good Practices in Cobalt-60 Teletherapy— A procedural review
Angela Scott, R.T. (T)

12:55 - 1:25

Review the purposes of the QMP
Angela Scott, R.T. (T)

1:25- 1:30

Break

Session 2:

1:30 - 2:15

To Carry Out The QMP Before Administration Of Radiation
Treatment
David Y. Chin, Ph.D.

2:15 - 2:25

Break

Session 3:

2:25 - 3:00

To Carry Out The QMP During And After Administration Of
Radiation Treatment
David Y. Chin, Ph.D.

3:00 - 3:30

Competence Test

3:30

Closing Remarks
David Chin, Ph.D.

Objectives of the QMP

In teletherapy, the quality management program has five objectives:

- (1) A written directive is prepared before administration,
- (2) The patient is identified, by more than one method before each administration, as the individual named in the written directive,
- (3) Final plans of treatment and related calculations for teletherapy are in accordance with their respective written directive,
- (4) Each administration is in accordance with the written directive,
- (5) Any unintended deviation from the written directive is identified and evaluated, and appropriate action is taken.

What is written directive?

(1) A written directive is defined as an order in writing for a specific patient, dated and signed by an authorized user prior to the administration of radiation, which has specifically defined details.

For teletherapy, it contains the total dose, dose per fraction, treatment site, overall treatment period, and treatment plan.

(2) A written directive can be modified as required by the judgement of physician at any time during the procedure.

(3) A written revision to an existing written directive may be made for any therapeutic procedure provided that the revision is dated and signed by the authorized user prior to the administration of the teletherapy dose.

What is patient identification?

The patient is identified, by more than one method before each administration, as the individual named in the written directive.

What is patient treatment record?

For patient treatment record,

(1) It should contain each written directive;

(2) A record of each administered radiation dose when a written directive is required, in an auditable form, for three years after the date of administration.

What is reportable event?

In teletherapy, a reportable event occurs:

- (1) When the calculated weekly administered dose differs from the prescribed dose by less than 15% but the prescribed dose by more than 5%.
- (2) Therapist did not carry out the procedures in the checklist before the treatment, or during the treatment, or after the treatment.

What is recordable event?

In teletherapy, a recordable event occurs:

- (1) When the calculated weekly administered dose differs from the prescribed dose by more than 15%.
- (2) When radiation is administered without a written or oral directive,
- (3) When radiation is administered without a treatment plan approved by the authorized user,
- (4) When radiation is administered without a face photo identification,
- (5) When radiation is administered without a dose calculation check in accordance with the department policy,
- (6) When radiation is administered without a complete daily recording of each radiation dose in the appropriate record.

What is misadministration?

In teletherapy, a misadministration occurs:

- (1) When radiation is delivered to the wrong patient or to the wrong site or by using the wrong mode,
- (2) When the calculated weekly administered dose is more than 30% greater than the weekly prescribed dose,
- (3) When the total administered dose differs by more than 20% of the total prescribed dose,
- (4) When the total administered dose differs by more than 10% for treatments consisting of three or fewer fractions.

PRE-TREATMENT CHECKUP PROTOCOL

Prior to administration of treatment, the following process should be completed:

(1) Therapists should check the checklist in patient's chart.

If therapists do not find the checklist in the chart, therapist should ask receptionist to complete one prior to administration of treatment.

(2) Therapists should check the patient's photo identification.

Each patient chart should have a face photo of the patient as identification. If patient's face photo identification is not available, therapists should identify patient by the following procedure.

The procedure used to identify the patient is to ask patient's name and confirm the name and at least one of the following by comparison with the corresponding information in the patient's record: birth date, address, social security number.

After identification of the patient as the individual named in the written directive, the photograph of the patient's face should be taken and used in combination with the patient's name to identify the patient, prior to each treatment, for the rest treatment.

(3) Therapists should confirm that the consent form has been signed, dated, and witnessed.

If the consent form is not signed, dated, and witnessed, follow the procedure to have the consent form to sign, date, and witness.

(4.1) Therapists should check the written directive for new treatment in a new area.

If the written directive is not in the chart, no treatment should be administered and the chart should be given to the authorized user to complete the written directive.

(4.2) Therapists should check the written directive for the coned down or boosted treatment in the same area. It is also required to check the written directive for the last treatment to the same area to ensure that the administered dose to the last treatment is in accordance with the written directive.

(4.3) Therapists should check the written directive for the treatment in an additional area. It is also required to check the written directive to the last treated area to ensure that the administered dose to the last treated area is in accordance with the written directive.

(5) Therapists should check the prescription of the authorized user to determine the category of treatment plan.

If "No Isodose Plan, Tx upon Department Protocol" is checked, therapists should apply department protocol to administer treatment and perform related calculations in accordance with the written directive.

If "Isodose Plan on Level I, Tx upon Department Protocol" is checked, therapists should apply department protocol to administer treatment and perform related calculations in accordance with the written directive.

If "Isodose Plan on Level I, Tx upon Isodose Plan" is checked, therapists should check the Treatment Prescription Summary to administer treatment and perform related calculations in accordance with the written directive and the treatment plan summary.

If "Isodose Plan on Level I, Simulation upon Isodose Plan" is checked, therapists should check the Treatment Prescription Summary to perform simulation procedure in accordance with the treatment plan summary. Then therapists should check the Treatment Prescription Summary to administer treatment and perform related calculations in accordance with the written directive and the treatment plan summary.

If "Isodose Plan on Level II, Tx upon Isodose Plan" is checked, therapist should check the Treatment Prescription Summary to administer treatment and perform related calculations in accordance with the written directive and the treatment plan summary.

If "Isodose Plan on Level II & III, Simulation upon Isodose Plan" are checked, therapists should check the Treatment Prescription Summary to perform simulation procedure in accordance with the treatment plan summary. Then therapists should check the Treatment Prescription Summary to administer treatment and perform related calculations in accordance with the written directive and the treatment plan summary.

TO CARRY OUT WRITTEN DIRECTIVE ON ROUTINE TREATMENT

- (1) No radiation treatment will be administered under any circumstance if no written directive or revision of written directive is prepared prior to patient treatment.
- (2) If there is no written directive or revision of written directive is not prepared in the chart prior to treatment, therapists should take the chart to the authorized user and have the written directive or revision of written directive signed and dated by the authorized user before the treatment.
- (3) If the authorized user is not available, therapists should make every effort to have the written directive or revision of the written directive signed and dated by the authorized user before the treatment. If the written directive is not signed and date in the chart, no treatment will be administered in any circumstance.
- (4) If there is any doubt or uncertainty on the written directive, therapists should ask the authorized user immediately before treatment. The treatment should not continue until the doubt or uncertainty is clearly understood.
- (5) Treating patient with doubt or uncertainty on the written directive will be considered as treating patient without written directive.

TO CARRY OUT WRITTEN DIRECTIVES DURING EMERGENT TREATMENT

- (1) The definition of emergent treatment in radiation therapy is a situation when a delay of radiation treatment would jeopardize the patient's health.
- (2) Oral directive to emergent treatment
 - (2.1) If no written directive is prepared in the chart prior to treatment during emergent situation, oral directive will be acceptable.
 - (2.2) The information contained in the oral directive will be documented in the chart by the therapist who received the oral directive. The documentation will be confirmed by the authorized user before preparing the written directive.
 - (2.3) A written directive should be prepared by the authorized user within 24 hours of the oral directive.
- (3) Oral revision to an existing written directive to emergent treatment
 - (3.1) If no written revision to an existing written directive is prepared in the chart prior to treatment during emergent situation, oral revision to an existing written directive will be acceptable.
 - (3.2) The information contained in the oral revision to the existing written directive will be documented in the chart by the therapist who received the oral directive. The documentation will be confirmed by the authorized user before preparing the written directive.
 - (3.3) A written revision to the existing written directive should be prepared by the authorized user within 24 hours of the oral revision to the existing written directive.
- (4) If there is any doubt or uncertainty on the oral directive, therapists should ask the authorized user immediately before treatment. The treatment should not continue until the doubt or uncertainty is clearly understood and documented.
- (5) Treating patient with doubt or uncertainty on the oral directive and incorrect documentation will be considered as treating patient without oral directive.
- (6) It is recommended to repeat the oral directive before documenting it in the chart.

TO CARRY OUT PROCEDURES TO IDENTIFY PATIENT

Prior to administration of treatment, the following procedures should be completed:

(1) The patient face photo identification should be taken by the oncology nurse after consultation.

(2) Therapists should check the patient's photo identification before simulation.

Each patient chart should have a face photo of the patient as identification. If patient's face photo identification is not available, therapists should identify patient by the following procedure.

The procedure used to identify the patient is to ask patient's name and confirm the name and at least one of the following by comparison with the corresponding information in the patient's record: birth date, address, social security number.

After identification of the patient as the individual named in the chart, the photograph of the patient's face should be taken and used in combination with the patient's name to identify the patient for the treatment.

(3) Therapists should check the patient's photo identification before treatment.

Each patient chart should have a face photo of the patient as identification. If patient's face photo identification is not available, therapists should identify patient by the following procedure.

The procedure used to identify the patient is to ask patient's name and confirm the name and at least one of the following by comparison with the corresponding information in the patient's record: birth date, address, social security number.

After identification of the patient as the individual named in the chart, the photograph of the patient's face should be taken and used in combination with the patient's name to identify the patient, prior to each treatment, for the rest treatment.

TO CARRY TX PLANNING CHECK

Isodose Plan

- No Isodose Plan, Tx upon Department Protocol,
- Isodose Plan on Level I, Tx upon Departmental Protocol,
- Isodose Plan on Level I, Tx upon Isodose Plan,
- Isodose Plan on Level I, Simulation upon Isodose Plan,
- Isodose Plan on Level II, Tx upon Isodose Plan,
- Isodose Plan on Level II, Simulation upon Isodose Plan,
- Isodose Plan on Level III, Simulation upon Isodose Plan .

Department Protocol

1. Single field SSD Treatment (HBB)
Measure SSD at the center of treating area and check the treatment depth in Doctor's prescription.
2. Single field SSD Treatment (Not HBB)
Use setup SSD (usually 100cm) and check the treatment depth in Doctor's prescription.
3. Single field SAD Treatment (No HBB)
Depth in Doctor's prescription will match with setup depth in patient.
4. POP/BiLat SSD Treatment (No special weighting, No mixed beams)
Treatment depth will be 1/2 of the IFD. Tumor dose is equally weighted and IDL=100%.
5. POP/BiLat SAD Treatment (NO special weighting, No mixed beams)
Treatment prescription is at isocenter. Tumor dose is equally weighted and IDL=100%.

Level #1, Tx upon Department Protocol

- 1. Single Field Vertebral Treatment.
- 2. POP Lung
- 3. Bilateral Head & Neck

Requirement: 30-degree Contouring Film Paper contour
 -degree Oblique Film Lateral Film
Physicist reports critical organ's dose.

Level #1, Tx upon Isodose Plan

- 1. Single Field with mixed beams technique.
- 2. POP/BiLat/Oblique with special weighting, wedge, or mixed beams.
- 3. Three Fields or Four Fields.
- 4. Tangential Technique.

Requirement: 30-degree Contouring Film Paper contour
 40-degree Oblique Film Lateral Film
To determine the lung bite for tangential fields only
Doctor draws PTV in the contour.
Physicist reports dose in the PTV and critical organs.

Level #1, Simulation upon Plan

- 1. Oblique Treatment.
- 2. Arc Technique.

Requirement: CT or MRI scans.
Doctor draws PTV and critical organs in the CT films.
Physicist reports dose in the PTV and critical organs.

Level #2, Tx upon Isodose Plan

- 1. Isodose Plans at different levels, generally three cuts.

Requirement: Flat bed CT or MRI images after simulation
Doctor draws PTV in the contour.
Physicist reports dose in the PTV and critical organs.

Level #2, Simulation upon Isodose Plan

- 1. Isodose Plans at different level, generally three cuts.

Requirement: Pre-simulation to identify location to scan.
Flat Bed CT or MRI scans.
Doctor draws PTV and critical organs in the CT films.
Physicist reports dose in the PTV and critical organs.

MedCentral Health System/Mansfield Hospital

Department policy: Dose calculation check should be done prior to the 3rd fraction or before 10% of total dose has been delivered, whichever occurs first.

The calculation check will be done by Physicist. Therapist should give the chart to Physicist, not leaving it in Physicist's mailbox.

If Physicist is not available, ask Dr. Koh to check and sign.

Patient Name: Dee, John Primary Therapist: Linda

Account NO: 1234567 Date of Service start: 2/25/98 () New Page/ Pages before this page

After Rx# 25 Treatment will be : C/D After Rx # Treatment will be :

(New)/(Modified) Chart Review	Rx #	Therapist	For Physicist	Calculation/Weekly Check
New/Modified Patient Chart Review For FLD NO <u>1-4</u> Therapist <u>LH</u> 1. Patient Identification YES/ NO 2. Consent Signed/Witnessed YES/ NO 1 & 2 for New Patient Chart Only 3. Prescription Completed YES/NO If NO, have Doctor complete it. If FLD Modified, check prescription on the last FLDs. <u>LH</u> If New area added, check prescription on the original area. <u> </u> 4. TX Planning Check prescription. If Tx upon plan is required, ask Dr. / Physicist. 5. Parameters on simulation worksheet and setup parameters are checked. If IFD difference(absolute) >= 1cm, notify Angela immediately 6. MU/Time Calculation Review parameters on calculation before treating patient. Step #2 on <u> </u> Have physicist check according to policy stated above.	1		Give to DC DC initial <u> </u>	After calculation check, DC will initial and date below
	2			Initial <u> </u> Date <u> </u>
	3		Give to DC	Weekly check initial and date
	4			Initial <u> </u> Date <u> </u>
	5		Therapist	TX record completed
	6			Documentation checked
	7			
	8		Give to DC	Weekly check initial and date
	9			initial <u> </u> Date <u> </u>
	10		Therapist	TX record completed
	11			Documentation checked
	12			
	13		Give to DC	Weekly check initial and date
	14			Initial <u> </u> Date <u> </u>
Daily- Tx Record and Documentation	15		Therapist	TX record completed
Modified Patient Chart Review For FLD NO <u> </u> Therapist <u> </u> 1. Prescription Completed YES/NO If NO, have Doctor complete. If FLD Modified, check prescription on the last FLDs. <u> </u> If New area added, check prescription on the original area. <u> </u> 2. TX Planning Check prescription. If Tx upon plan is required, ask Dr. / Physicist. 3. Parameters on simulation worksheet and setup parameters are checked. If IFD difference(absolute) >= 1cm, notify Angela immediately 4. MU/Time Calculation Review parameters on calculation before treating patient. Step #2 on <u> </u> Have physicist check according to policy stated above.	16			Documentation checked
	17			
	18		Give to DC	Weekly check initial and date
	19			Initial <u> </u> Date <u> </u>
	20		Therapist	TX record completed
	21			Documentation checked
	22			
	23		Give to DC	Weekly check initial and date
	24			initial <u> </u> Date <u> </u>
	25		Therapist	TX record completed
	26			Documentation checked
	27			
	28		Give to DC	Weekly check initial and date
	Completeness Check initial and date	Calculation Check for C/D FLD		Initial <u> </u> Date <u> </u>
Initial <u> </u> Date <u> </u>	DC initials and dates on the right		Initial <u> </u> Date <u> </u>	

DURING TREATMENT CHECKUP PROTOCOL

During treatment, the following process should be completed:

(1) Primary therapist should set up patient according to the setup instructions in the chart. Therapists should check the simulation worksheet in patient chart to ensure that the parameters in simulation worksheet is consistent with the parameters in the treatment setup. The tolerance for the SSD difference is the following:

(a) For single field, the SSD should be within 0.6 cm,

(b) For POP field, the IFD should be within 1cm.

Therapists should make every effort to reproduce the setup by adjusting patient's position. After making any effort, the SSDs or the IFDs in the treatment setup is out of the tolerances compared to the SSDs or the IFDs in the simulation worksheet, therapist should seek the help from the supervisor. If the problem does not resolve, the authorized user should be notified and action should be taken to correct.

It is the responsibility of the authorized user to make decision whether the treatment should be continued or the treatment should be postponed by re-simulating the patient.

(2) Primary therapist will be responsible for the placement of the blocks and wedge filters.

(3) Primary therapists should perform the dose calculation in accordance with the written directive and treatment plan summary. After dose calculation, therapists should review the printout of dose calculation and ensure the parameters in the dose calculation are consistent with the parameters in the simulation worksheet. Therapists also check the calculated doses are consistent with the prescribed doses in the written directive. The dose calculation should be checked prior to the 3rd fraction or before 10% of total dose has been delivered, whichever occurs first.

(4) Primary therapists will be responsible to ensure the proper energy, monitor unit or time, blocking tray, and wedge are consistent with the written directive and treatment plan.

The energy used, monitor unit or time, blocking tray, and wedge filter should be checked and confirmed before pressing the "BEAM ON" key.

(5) Primary therapist will be responsible to observe the patient during the treatment. If any movement of the patient is detected, treatment should be terminated and therapists should go inside the treatment room to check the setup. If the treatment setup is changed due to the patient's movement, corrective action should be taken before the treatment is resumed.

GUIDELINE TO CARRY OUT DOSE CALCULATION

Data Entry

- (1) The patient calculation data should be entered by simulation therapists.
- (2) The patient calculation data should be entered immediately after simulation.
- (3) The simulation therapist should check the entered data with the data in the simulation work sheet.
- (4) The simulation therapist should confirm the accuracy of the entered data.
- (5) The name used to identify the patient should follow the rules posted in the linear accelerator control room.

Dose calculation

- (1) The dose calculation will be completed by the primary therapist.
- (2) The calculation will be calculated immediately after the SSDs and depths have been checked on the patient treatment setup.
- (3) The calculation will be calculated by entering blocked area to correct the dose.
- (4) If the central axis is covered by the block, the SSD and depth at the location where the authorized user assigned should be measured and entered into computer for calculation.
- (5) The SSD and depth should be documented in the blocked field map for irregular calculation which is performed by The physicist.

AFTER TREATMENT CHECKUP PROTOCOL

After administration of treatment, the following process should be completed:

- (1) Primary therapists should make, date, and sign or initial a written record in the patient's chart that contains, for each treatment field, the treatment time, dose administered, and the cumulative dose administered.
- (2) Primary therapists should initial the checklist and determine which procedures should be followed:
 - (a) To give the chart in person to physicist to have calculation checked,
 - (b) To give chart to physicist to have chart checked,

TO CARRY OUT DOSE CALCULATION CHECK

The dose calculation should be checked upon the following:

- (1) The dose calculation should be checked prior to the 3rd fraction or before 10% of total dose has been delivered, whichever occurs first.
- (2) Dose calculation check should be done by physicist under supervision of the authorized user.
- (3) To ensure the written directive and treatment plan are implemented, physicist must check the following:
 - (a) The daily dose calculated for each field is consistent with the total dose and fraction scheme for that site according to the written directive and treatment plan.
 - (b) All treatment fields and parameters used for calculation are consistent with those listed on the simulation work sheet and treatment plan summary.
 - (c) Beam weighting is consistent with the value on the treatment plan summary.
 - (d) Beam blocking is extensive, and if so, the irregular field calculation will be performed to calculate dose.
 - (e) patient treatment depth or separation in the treatment site varies significantly in the treatment site, if so, whether the depth or separation used for calculation corresponds to the depth or separation at the actual clinical point of interest.
 - (f) Significant hot spot have been calculated and document in the chart.
 - (g) For multi-field treatment, the monitor unit or time setting indicated on the daily record for a particular field corresponds to the correct monitor unit or time calculated for that particular field.
 - (h) Special dose modifying devices have been used, if so, The physicist should ensure that the dose calculations have been appropriately modified.
 - (i) For treatment, when a special block cutout is used or when the output of treatment at a special SSD is not calibrated or when the output of treatment at a special field size is not calibrated, an appropriate measurement will be made to account for these special cases before the treatment.
- (4) The physicist should perform the irregular calculation to consider the effects of blocks and air in the dose calculation.
- (5) The result of the the physicist's calculation will be filled in the chart.
- (6) The physicist is responsible to initial and date in the checklist to indicate the completeness of the calculation check.

TO CARRY OUT DOSE CALCULATION CHECK WITHOUT PHYSICIST

The dose calculation should be checked upon the following:

- (1) Dose calculation check should be done prior to the 3rd fraction or before 10% of total dose has been delivered, whichever occurs first.
- (2) The assigned therapist will perform an independent dose calculation. The result of the two dose calculations will be compared, if the difference is less than 3%, the independent dose calculation should be signed and dated by the authorized user. If the difference is more or equal to 3%, the cause of the discrepancy between these two calculations should be evaluated and another calculation should be performed. It should have the authorized user to sign and date the last calculation if the difference between these two calculations is less than 3%.
- (3) The authorized user checks the dose calculation to ensure the written directive and treatment plan are implemented.
- (4) The authorized user will check the parameters used in the dose calculation to ensure they are consistent with the simulation worksheet. The authorized user does not perform any actual dose calculation or irregular calculation.
The physicist will perform the irregular calculation to consider the blocks and air in the dose calculation when he is available. If the difference in dose is greater than 5%, the authorized user should be notified.
- (5) The authorized user should initial and date in the calculation sheet to indicate that the check of the parameters in the dose calculation is performed by the authorized user.
- (6) The physicist is responsible to initial and date in the checklist to indicate the completeness of the dose calculation check when he is available.

MedCentral Health System/Mansfield Hospital

Department policy: Dose calculation check should be done prior to the 3rd fraction or before 10% of total dose has been delivered, whichever occurs first.

The calculation check will be done by Physicist. Therapist should give the chart to Physicist, not leaving it in Physicist's mailbox.

If Physicist is not available, ask Dr. Koh to check and sign.

Patient Name: Doe, John Primary Therapist: Linda

Account NO:1234567 Date of Service start: 2/25/98 (X)New Page/ Pages before this page

After Rx# 25 Treatment will be : C/D After Rx # Treatment will be :

(New)/(Modified) Chart Review	Rx #	Therapist	For Physicist	Calculation/Weekly Check
New/Modified Patient Chart Review For FLD NO <u>1-4</u> Therapist <u>LH</u> 1. Patient Identification YES/ NO 2. Consent Signed/Witnessed YES/ NO 1 & 2 for New Patient Chart Only 3. Prescription Completed YES/NO If NO, have Doctor complete it. If FLD Modified, check prescription on the last FLDs. <u>LH</u> If New area added, check prescription on the original area. <u> </u> 4. TX Planning Check prescription. If Tx upon plan is required, ask Dr. / Physicist. 5. Parameters on simulation worksheet and setup parameters are checked. <u>LH</u> If IFD difference(absolute) >= 1cm, notify Angela immediately 6. MU/Time Calculation Review parameters on calculation before treating patient. Step #2 on <u>2/25/98</u> Have physicist check according to policy stated above.	1	<u>LH</u>	Give to DC DC initial <u>DC</u>	After calculation check, DC will initial and date below
	2			Initial <u>DC</u> Date <u>2/25/98</u>
	3		Give to DC	Weekly check initial and date
	4			Initial <u> </u> Date <u> </u>
	5		Therapist	TX record completed
	6			Documentation checked
	7			
	8		Give to DC	Weekly check initial and date
	9			initial <u> </u> Date <u> </u>
	10		Therapist	TX record completed
	11			Documentation checked
	12			
	13		Give to DC	Weekly check initial and date
	14			Initial <u> </u> Date <u> </u>
Daily- Tx Record and Documentation	15		Therapist	TX record completed
Modified Patient Chart Review For FLD NO <u> </u> Therapist <u> </u> 1. Prescription Completed YES/NO If NO, have Doctor complete. If FLD Modified, check prescription on the last FLDs. <u> </u> If New area added, check prescription on the original area. <u> </u> 2. TX Planning Check prescription. If Tx upon plan is required, ask Dr. / Physicist. 3. Parameters on simulation worksheet and setup parameters are checked. <u> </u> If IFD difference(absolute) >= 1cm, notify Angela immediately 4. MU/Time Calculation Review parameters on calculation before treating patient. Step #2 on <u> </u> Have physicist check according to policy stated above.	16			Documentation checked
	17			
	18		Give to DC	Weekly check initial and date
	19			Initial <u> </u> Date <u> </u>
	20		Therapist	TX record completed
	21			Documentation checked
	22			
	23		Give to DC	Weekly check initial and date
	24			initial <u> </u> Date <u> </u>
	25		Therapist	TX record completed
	26			Documentation checked
	27			
	28		Give to DC	Weekly check initial and date
	Completeness Check initial and date	Calculation Check for C/D FLD		initial <u> </u> Date <u> </u>
Initial <u> </u> Date <u> </u>	DC initials and dates on the right		Initial <u> </u> Date <u> </u>	

TO CARRY OUT WEEKLY CHART CHECKING

The weekly chart checking should be performed upon the following:

- (1) Every patient chart should be checked once every five treatment days.
- (2) The patient chart should be checked by the physicist under the supervision of the authorized user.
- (3) To ensure the written directive and treatment plan is implemented, the physicist will check the following:
 - (a) All doses have been correctly summed since the previous chart review. This should include the dose to the prescribed site and all additional sites such as critical organs.
 - (b) The total doses to the prescribed point reach the total prescribed doses prior to the next weekly chart review, if so, a note should be written in the chart noting the last treatment.
 - (c) The total dose to the prescribed point does not exceed the prescribed dose.
 - (4) The physicist should document in the checklist any finding, if there is any deviation detected, in the checklist.
- (5) The physicist is responsible to initial and date in the checklist to indicate the completeness of the chart checking.

TO CARRY OUT WEEKLY CHART CHECKING WITHOUT THE PHYSICIST

The weekly chart checking should be performed upon the following:

- (1) Every patient chart should be checked once every five treatment days.
- (2) The patient chart should be checked by the authorized user.
- (3) To ensure the written directive and treatment plan is implemented correctly, the authorized user will check the following:
 - (a) All doses have been correctly summed since the previous chart review. This should include the dose to the prescribed site and all additional sites such as critical organs.
 - (b) The total doses to the prescribed point reach the total prescribed doses prior to the next weekly chart review, if so, a note should be written in the chart noting the last treatment.
 - (c) The total dose to the prescribed point does not exceed the prescribed dose.
 - (4) The authorized user should document any finding, if there is any deviation detected, in the checklist.
 - (5) The authorized user should initial and date in the chart to indicate that the review the delivered dose is performed by the authorized user.
- (6) The physicist will repeat the check when he is available. The physicist is responsible to initial and date in the checklist to indicate the completeness of the chart checking.

MedCentral Health System/Mansfield Hospital

Department policy: Dose calculation check should be done prior to the 3rd fraction or before 10% of total dose has been delivered, whichever occurs first.

The calculation check will be done by Physicist. Therapist should give the chart to Physicist, not leaving it in Physicist's mailbox.

If Physicist is not available, ask Dr. Koh to check and sign.

Patient Name: Doe, John Primary Therapist: Linda

Account NO: 123*567 Date of Service start: 2/25/98 (X)New Page/ Pages before this page

After Rx# 25 Treatment will be: C/D After Rx # Treatment will be:

(New)/(Modified) Chart Review

	Rx #	Therapist	For Physicist	Calculation/Weekly Check
New/Modified Patient Chart Review For FLD NO <u>1-4</u> Therapist <u>LH</u>	1	LH	Give to DC DC initial <u>DC</u>	After calculation check, DC will initial and date below
1. Patient Identification YES/ NO	2	LH		Initial <u>DC</u> Date <u>2/25/98</u>
2. Consent Signed/Witnessed YES/ NO 1 & 2 for New Patient Chart Only	3	LH	Give to DC	Weekly check initial and date
3. Prescription Completed YES/NO If NO, have Doctor complete it. If FLD Modified, check prescription on the last FLDs. <u>LH</u>	4			Initial dc Date <u>2/27/98</u>
If New area added, check prescription on the original area. <u> </u>	5		Therapist	TX record completed
4. TX Planning	6			Documentation checked
Check prescription. If Tx upon plan is required, ask Dr. / Physicist.	7			
5. Parameters on simulation worksheet and setup parameters are checked. <u>LH</u>	8		Give to DC	Weekly check initial and date
If IFD difference(absolute) >= 1cm, notify Angela immediately	9			initial <u> </u> Date <u> </u>
6. MU/Time Calculation	10		Therapist	TX record completed
Review parameters on calculation before treating patient. Step #2 on 2/25/98 <u> </u> .	11			Documentation checked
Have physicist check according to policy stated above.	12			
	13		Give to DC	Weekly check initial and date
	14			Initial <u> </u> Date <u> </u>
Daily- Tx Record and Documentation	15		Therapist	TX record completed
Modified Patient Chart Review For FLD NO <u> </u> Therapist <u> </u>	16			Documentation checked
1. Prescription Completed YES/NO If NO, have Doctor complete. If FLD Modified, check prescription on the last FLDs. <u> </u>	17			
If New area added, check prescription on the original area. <u> </u>	18		Give to DC	Weekly check initial and date
2. TX Planning	19			Initial <u> </u> Date <u> </u>
Check prescription. If Tx upon plan is required, ask Dr. / Physicist.	20		Therapist	TX record completed
3. Parameters on simulation worksheet and setup parameters are checked. <u> </u>	21			Documentation checked
If IFD difference(absolute) >= 1cm, notify Angela immediately	22			
4. MU/Time Calculation	23		Give to DC	Weekly check initial and date
Review parameters on calculation before treating patient. Step #2 on <u> </u>	24			initial <u> </u> Date <u> </u>
Have physicist check according to policy stated above.	25		Therapist	TX record completed
	26			Documentation checked
	27			
	28		Give to DC	Weekly check initial and date
Completeness Check initial and date			Calculation Check for C/D FLD	Initial <u> </u> Date <u> </u>
Initial <u> </u> Date <u> </u>			DC initials and dates on the right	Initial <u> </u> Date <u> </u>

Date	Problem Identified	Action taken to correct the problem
2/27/98	addition error	corrected

New or Modified Treatment Field

- . New prescriptions,
- . New fields or field parameter modification indicated on the simwork sheet,
- . An indication of modified fields on the MU/Time calculation sheets, isodose plans, etc.,
- . MU/Time changes under a particular field indicated in the daily record,
- . Simulation/ port films and Polaroids of the field markings to identify new fields or field modifications,
- . An indication of a change in a "notes or remarks" section of the chart,
- . Correct treatment unit, modality, and beam energy are used for each field and correctly indicated on the daily record,
- . Each field treated has been signed after treatment by the therapists,
- . There is a definitive documentation in the treatment record (using codes, abbreviations) that indicated modifying device (blocks, wedges, bolus, compensator) being used,
- . Cumulative total dose for each site has been correctly recorded, taking into consideration the appropriate contributions from each field in the treatment plan,
- . Cumulative doses to the special calculations, critical organs has been correctly recorded,
- . The dose delivered by port films has been considered into cumulative dose.

Calculation Check Items

- . The daily dose calculated for each field is consistent with the total dose and fraction scheme for that site according to the prescription and isodose plan,
- . All beam and patient parameters used for the calculation are consistent with those list on the simwork sheet and treatment plan,
- . Beam weighting is consistent with the treatment plan,
- . Beam blocking is extensive, and if so, the irregular calculation will be made,
- . Patient separation varies significantly within the treatment area, and if so, whether the separation used for calculation corresponds to the separation at the actual clinical point of interest,
- . Significant hot spot have been calculated and documented in the chart,
- . For multifield treatment, the MU/Time setting indicated on the daily record for a particular field corresponds to the correct MU/Time calculation for that particular field,
- . Special dose modifying devices have been use, if so, the reviewer should check the dose calculations have been appropriately modified,
- . For electron beam treatments, special block cutouts were used, and treatment is at extended SSD, an appropriate measurement will be made to account for these special cases.

Weekly Chart Review

- . All doses have been correctly summed since the previous chart review. This should include the dose to the prescription site and all additional sites such as critical organs.
- . The total dose to the prescription point reach the total prescribed doses prior to the next weekly chart review
(If so, a note should be written in the chart noting the last treatment)
- . The total dose to the prescription point does not exceed the prescribed value.

Review at Completion of Treatment

- . Prescribed dose delivered,

**MEDCENTRAL HEALTH SYSTEM
MANSFIELD HOSPITAL
Treatment Prescription Summary**

Patient name: _____ Date: _____

Treatment Site				For medical
Isodose Plan (YES/NO) FLD NO	--	--	--	urgency,
Plan Reviewed date				patient must
Patient Position				be treated
Technique				immediately
Dose per Fraction in cGy				after sim.
To Which Point Special Depth				When Dr.
Total Fractions				gives oral
Total Dose in cGy				directives,
Date of Start				therapist
ICRU 50 Report Level #				should
Reference Point				document
Dose to Reference Point in cGy				immediately
PTVs				Energy
Maximum Dose in PTV				6, 18, Co
Minimum Dose in PTV				Dose (rads)
Organ at Risk				_____ rads/fx
Dose to Organ at Risk in cGy				at d=_____ cm
Hot Spot Outside PTV in cGy				mid-depth
Treatment After this Prescription				isocenter

Treatment Plan Summary

FLD NO						Area to be
FLD Name						Area to be
Energy						_____
FLD size						Therapist initial
Gantry						and date below.
SSD in plan						Initial _____
FLD WT						Date _____
Wedge						Dr. completes
Wedge Ratio						Rx within 24 hr.
FLD Dose						Dr. initial _____
% IDL		Total Field Dose in cGy for FD NO _____ per Fraction=				

This summary is prepared by Physicist upon Doctor's prescription.

Physicist _____ Date: ____ / ____ / ____ Form Prescription summary

Patient Treatment Prescription

Patient Name: _____ Treatment Area: _____ (Primary/ C/D)

Tumor Localization

- _____ Use previous CT/ MRI/ Ultrasound/ Nuclear Scan/ X-ray Films
- _____ Take CT / MRI/ Ultrasound/ Nuclear scan/ X-ray Films
- _____ Pre-simulation first then take CT / MRI / Ultrasound/ Nuclear scan

Contrast material

- _____ Barium (890086)
- _____ Isovuc (890076)
- _____ Cystography (890875)

Supplies

- _____ Catheter Tray (881040)
- _____ Straight Catheter (890158)
- _____ Angiocath (890485)
- _____ Face Mask (890345)
- _____ Alpha Mold (890156)
- _____ Bolus 1 cm (890257)
- _____ Bolus 1/2 cm (890256)

Isodose Plan

- _____ No Isodose Plan, Tx upon Department Protocol,
- _____ Isodose Plan on Level I, Tx upon Departmental Protocol,
- _____ Isodose Plan on Level I, Tx upon Isodose Plan,
- _____ Isodose Plan on Level I, Simulation upon Isodose Plan,
- _____ Isodose Plan on Level II, Tx upon Isodose Plan,
- _____ Isodose Plan on Level II, Simulation upon Isodose Plan,
- _____ Isodose Plan on Level III, Simulation upon Isodose Plan .

Treatment Device/Customized blocks

- Purpose
- _____ Blocks for primary area,
 - _____ Blocks for a separate area,
 - _____ Blocks for C/D Fields due to size of lesion change,
 - _____ Blocks for C/D Fields due to patient repositioning or technique change,
 - _____ Blocks for a boost due to field size change.

Quantity

- _____ 1 Single block for (AP, PA, R Lat, L Lat, RAO, LAO, RPO, LPO),
- _____ 1 AP/PA blocks using AP or PA simulation film,
- _____ 2 AP/PA blocks using AP and PA simulation films due to (Patient turning over, unsymmetry),
- _____ 1 R/L Lat blocks using one film only,
- _____ 2 R/L Lat blocks using two films from each side due to unsymmetry,
- _____ 1 RAO/LPO Oblique FLDs blocks using one film only,
- _____ 2 RAO/LPO Oblique FLDs blocks using two films from each direction due to unsymmetry,
- _____ 1 LAO/RPO Oblique FLDs blocks using one film only,
- _____ 2 LAO/RPO Oblique FLDs blocks using two films from each direction due to unsymmetry.

Treatment Device/Bolus

- _____ Fabricated single patient use special bolus,
- _____ Pre-fabricated bolus which is shaped for an individual patient.

Treatment Device/Blocks

- _____ One or two hand positioned pre-made blocks,
- _____ Multiple field blocks which includes three or more pre-made blocks,
- _____ cord blocks,
- _____ bite blocks.

Treatment Aid

- _____ Shoulder strap

Physics/Dosimetry

- _____ TDF Calculations _____ Gap Calculations _____ Inhomogeneity Calculations,
- _____ Micro-dosimetry for Output/ Off Axis Dose/ Critical Organ/ QC on Tx.

Clinical

- _____ Pre-Treatment setup and parameter check, _____ Orthogonal films.
- _____ Patient needs full Bladder technique, _____ Setup film.
- _____ Port Film _____ Times per Week,
- _____ TBS Times per Week,
- _____ WBC _____ Times per Week, _____ WT _____ Times per Week.

Radiation Oncologist _____ Date: _____

MEDCENTRAL HEALTH SYSTEM
MANSFIELD HOSPITAL

- Department Protocol _____ 1. Single field SSD Treatment (HBB)
Measure SSD at the center of treating area and check the treatment depth in Doctor's prescription.
- _____ 2. Single field SSD Treatment (Not HBB)
Use setup SSD (usually 100cm) and check the treatment depth in Doctor's prescription.
- _____ 3. Single field SAD Treatment (No HBB)
Depth in Doctor's prescription will match with setup depth in patient.
- _____ 4. POP/BiLat SSD Treatment (No special weighting, No mixed beams)
Treatment depth will be 1/2 of the IFD. Tumor dose is equally weighted and IDL=100%.
- _____ 5. POP/BiLat SAD Treatment (NO special weighting, No mixed beams)
Treatment prescription is at isocenter. Tumor dose is equally weighted and IDL=100%.

- Level #1, Tx upon Department Protocol _____ 1. Single Field Vertebral Treatment.
_____ 2. POP Lung
_____ 3. Bilateral Head & Neck

Requirement: _____ 30-degree Contouring Film _____ Paper contour
_____ -degree Oblique Film _____ Lateral Film

Physicist reports critical organ's dose.

- Level #1, Tx upon Isodose Plan _____ 1. Single Field with mixed beams technique.
_____ 2. POP/BiLat/Oblique with special weighting , wedge, or mixed beams.
_____ 3. Three Fields or Four Fields.
_____ 4. Tangential Technique.

Requirement: _____ 30-degree Contouring Film _____ Paper contour
_____ -degree Oblique Film _____ Lateral Film
_____ To determine the lung bite for tangential fields only

Doctor draws PTV in the contour.

Physicist reports dose in the PTV and critical organs,

- Level #1, Simulation upon Plan _____ 1. Oblique Treatment.
_____ 2. Arc Technique.

Requirement: CT or MRI scans.
Doctor draws PTV and critical organs in the CT films.
Physicist reports dose in the PTV and critical organs.

- Level #2, Tx upon Isodose Plan _____ 1. Isodose Plans at different levels, generally three cuts.

Requirement: Flat bed CT or MRI images after simulation
Doctor draws PTV in the contour.
Physicist reports dose in the PTV and critical organs.

- Level #2, Simulation upon Isodose Plan _____ 1. Isodose Plans at different level, generally three cuts.

Requirement: Pre-simulation to identify location to scan.
Flat Bed CT or MRI scans.
Doctor draws PTV and critical organs in the CT films.
Physicist reports dose in the PTV and critical organs.

Therapist Name: _____ Date: _____ Score: _____

1. A written directive must be prepared (1) before the first treatment (2) after the first treatment (3) depending on Doctor's schedule (4) depending on the difficulty of the treatment.

Answer: _____

2. A written directive should contain (1) total dose (2) dose per fraction (3) treatment site (4) overall treatment period (5) treatment plan (6) all of them.

Answer: _____

3. Patient should be identified by (1) therapist's memory on patient name (2) calling patient name to see who answers (3) at least two methods to identify patient (4) one method to identify patient.

Answer: _____

4. When will therapist fill out patient treatment record?

(1) before treatment (2) during treatment (3) after treatment (4) any time therapist is available.

Answer: _____

5. Which of the following is misadministration?

(1) treatment was given to wrong patient (2) treatment was given to wrong site (3) treatment was given by using wrong energy (4) all of them.

Answer: _____

6. If isodose plan "Isodose Level I Tx upon Department protocol" is marked, it means

(1) call physicist to ask the plan (2) ask doctor the treatment plan (3) ask supervisor (4) follow the Department protocol.

Answer: _____

7. If you have question concerning the written directive, you should (1) ask your co-worker to explain (2) ask supervisor (3) ask physicist (4) ask doctor to clarify.

Answer: _____

8. If patient has a c/d treatment for lung cancer, you must check the written directive for the c/d fields and you must ensure that the completeness of the last treatment before c/d. T / F

Circle one

9. When therapists set the treatment time or monitor unit, one therapist sets the time; another therapist will (1) watch patient (2) complete chart (3) carry out "double check" (4) do nothing.

Answer: _____

10. If the total number of fractions is less than 3, the calculation check must be done (1) before the 3rd treatment (2) before the 2nd treatment (3) before the last treatment (4) before the first treatment.

Answer: _____

11. Upon Department policy, when will you give the chart to the physicist to check? (1) after 2nd treatment (2) after 5th treatment (3) if therapist remember (4) after 3rd treatment and continuing every five treatments.

Answer: _____

12. When the physicist is absent, the assigned therapist will perform an independent calculation, The assigned therapist is (1) therapist does the original calculation (2) therapist assigned by physicist (3) any therapist who did not perform the original calculation (4) all of them.

Answer: _____

13. Which of the following is emergent situation?

(1) patient treatment schedule is one hour late (2) patient has cord compression to treat (3) doctor has another patient to take care (4) patient's transportation is waiting to leave

Answer: _____

14. If doctor add a new area to an existing treatment, you must check the written directive for the new added area and you must check the written directive of the existing treatment. T / F

Circle one

1,2,3,4,5,6,7,9,10,11,12,13 7 points/each

8 and 14 8 points/each

Therapist Name: Angela Scott Date: 2-25-98 Score: 93

1. A written directive must be prepared (1) before the first treatment (2) after the first treatment (3) depending on Doctor's schedule (4) depending on the difficulty of the treatment.

Answer: 1

2. A written directive should contains (1) total dose (2) dose per fraction (3) treatment site (4) overall treatment period (5) treatment plan (6) all of them.

Answer: 6

3. Patient should be identified by (1) therapist's memory on patient name (2) calling patient name to see who answers (3) at least two methods to identify patient (4) one method to identify patient.

Answer: 3

4. When will therapist fill out patient treatment record?

(1) before treatment (2) during treatment (3) after treatment (4) any time therapist is available.

Answer: 3

5. Which of the following is misadministration?

(1) treatment was given to wrong patient (2) treatment was given to wrong site (3) treatment was given by using wrong energy (4) all of them.

Answer: 4

6. If isodose plan "Isodose Level I Tx upon Department protocol" is marked, it means

(1) call physicist to ask the plan (2) ask doctor the treatment plan (3) ask supervisor (4) follow the Department protocol.

Answer: 4

7. If you have question concerning the written directive, you should (1) ask your co-worker to explain (2) ask supervisor (3) ask physicist (4) ask doctor to clarify.

Answer: 4

8. If patient has a c/d treatment for lung cancer, you must check the written directive for the c/d fields and you must ensure that the completeness of the last treatment before c/d. T / F

Circle one

9. When therapists set the treatment time or monitor unit, one therapist sets the time; another therapist will (1) watch patient (2) complete chart (3) carry out "double check" (4) do nothing.

Answer: 3

10. If the total number of fractions is less than 3, the calculation check must be done (1) before the 3rd treatment (2) before the 2nd treatment (3) before the last treatment (4) before the first treatment.

Answer: 4

11. Upon Department policy, when will you give the chart to the physicist to check? (1) after 2nd treatment (2) after 5th treatment (3) if therapist remember (4) after 3rd treatment and continuing every five treatments.

Answer: 4

12. When the physicist is absent, the assigned therapist will perform an independent calculation, The assigned therapist is (1) therapist does the original calculation (2) therapist assigned by physicist (3) any therapist who did not perform the original calculation (4) all of them.

Answer: 3

13. Which of the following is emergent situation?

(1) patient treatment schedule is one hour late (2) patient has cord compression to treat (3) doctor has another patient to take care (4) patient's transportation is waiting to leave

Answer: 2

14. If doctor add a new area to a existing treatment, you must check the written directive for the new added area and you must check the written directive of the existing treatment. T / F

Circle one

1,2,3,4,5,6,7,9,10,11,12,13 7 points/each

8 and 14 8 points/each

Therapist Name: Linda Harbaugh Date: 2-25-98 Score: 93

1. A written directive must be prepared (1) before the first treatment (2) after the first treatment (3) depending on Doctor's schedule (4) depending on the difficulty of the treatment.

Answer: 1

2. A written directive should contain (1) total dose (2) dose per fraction (3) treatment site (4) overall treatment period (5) treatment plan (6) all of them.

Answer: 6

3. Patient should be identified by (1) therapist's memory on patient name (2) calling patient name to see who answers (3) at least two methods to identify patient (4) one method to identify patient.

Answer: 3

4. When will therapist fill out patient treatment record?

(1) before treatment (2) during treatment (3) after treatment (4) any time therapist is available.

Answer: 3

5. Which of the following is misadministration?

(1) treatment was given to wrong patient (2) treatment was given to wrong site (3) treatment was given by using wrong energy (4) all of them.

Answer: 4

6. If isodose plan "Isodose Level I Tx upon Department protocol" is marked, it means

(1) call physicist to ask the plan (2) ask doctor the treatment plan (3) ask supervisor (4) follow the Department protocol.

Answer: 4

7. If you have question concerning the written directive, you should (1) ask your co-worker to explain (2) ask supervisor (3) ask physicist (4) ask doctor to clarify.

Answer: 4

8. If patient has a c/d treatment for lung cancer, you must check the written directive for the c/d fields and you must ensure that the completeness of the last treatment before c/d. T / F

Circle one

9. When therapists set the treatment time or monitor unit, one therapist sets the time; another therapist will (1) watch patient (2) complete chart (3) carry out "double check" (4) do nothing.

Answer: 3

10. If the total number of fractions is less than 3, the calculation check must be done (1) before the 3rd treatment (2) before the 2nd treatment (3) before the last treatment (4) before the first treatment.

Answer: 4

11. Upon Department policy, when will you give the chart to the physicist to check? (1) after 2nd treatment (2) after 5th treatment (3) if therapist remember (4) after 3rd treatment and continuing every five treatments.

Answer: 4

12. When the physicist is absent, the assigned therapist will perform an independent calculation, The assigned therapist is (1) therapist does the original calculation (2) therapist assigned by physicist (3) any therapist who did not perform the original calculation (4) all of them.

Answer: 3

13. Which of the following is emergent situation?

(1) patient treatment schedule is one hour late (2) patient has cord compression to treat (3) doctor has another patient to take care (4) patient's transportation is waiting to leave

Answer: 2

14. If doctor add a new area to a existing treatment, you must check the written directive for the new added area and you must check the written directive of the existing treatment. T / F

Circle one

1,2,3,4,5,6,7,9,10,11,12,13 7 points/each

8 and 14 8 points/each

Therapist Name: Hilary Adkins Date: 2-25-98 Score: 100

- ✓ 1. A written directive must be prepared (1) before the first treatment (2) after the first treatment (3) depending on Doctor's schedule (4) depending on the difficulty of the treatment.

Answer: 2

- ✓ 2. A written directive should contain (1) total dose (2) dose per fraction (3) treatment site (4) overall treatment period (5) treatment plan (6) all of them.

Answer: 6

- ✓ 3. Patient should be identified by (1) therapist's memory on patient name (2) calling patient name to see who answers (3) at least two methods to identify patient (4) one method to identify patient.

Answer: 3

- ✓ 4. When will therapist fill out patient treatment record?

(1) before treatment (2) during treatment (3) after treatment (4) any time therapist is available.

Answer: 3

- ✓ 5. Which of the following is misadministration?

(1) treatment was given to wrong patient (2) treatment was given to wrong site (3) treatment was given by using wrong energy (4) all of them.

Answer: 4

- ✓ 6. If isodose plan "Isodose Level I Tx upon Department protocol" is marked, it means

(1) call physicist to ask the plan (2) ask doctor the treatment plan (3) ask supervisor (4) follow the Department protocol.

Answer: 4

- ✓ 7. If you have question concerning the written directive, you should (1) ask your co-worker to explain (2) ask supervisor (3) ask physicist (4) ask doctor to clarify.

Answer: 4

- ✓ 8. If patient has a c/d treatment for lung cancer, you must check the written directive for the c/d fields and you must ensure that the completeness of the last treatment before c/d. T F

Circle one

- ✓ 9. When therapists set the treatment time or monitor unit, one therapist sets the time; another therapist will (1) watch patient (2) complete chart (3) carry out "double check" (4) do nothing.

Answer: 3 (then watch patient)

- ✓ 10. If the total number of fractions is less than 3, the calculation check must be done (1) before the 3rd treatment (2) before the 2nd treatment (3) before the last treatment (4) before the first treatment.

Answer: 4

- ✓ 11. Upon Department policy, when will you give the chart to the physicist to check? (1) after 2nd treatment (2) after 5th treatment (3) if therapist remember (4) after 3rd treatment and continuing every five treatments.

Answer: 4

- ✓ 12. When the physicist is absent, the assigned therapist will perform an independent calculation. The assigned therapist is (1) therapist does the original calculation (2) therapist assigned by physicist (3) any therapist who did not perform the original calculation (4) all of them.

Answer: 3

- ✓ 13. Which of the following is emergent situation?

(1) patient treatment schedule is one hour late (2) patient has cord compression to treat (3) doctor has another patient to take care (4) patient's transportation is waiting to leave

Answer: 2

- ✓ 14. If doctor add a new area to a existing treatment, you must check the written directive for the new added area and you must check the written directive of the existing treatment. T F

Circle one

1,2,3,4,5,6,7,9,10,11,12,13 7 points/each

8 and 14 8 points/each

Therapist Name: Denise Date: 2-25-98 Score: 100

1. A written directive must be prepared (1) before the first treatment (2) after the first treatment (3) depending on Doctor's schedule (4) depending on the difficulty of the treatment.

Answer: 1

2. A written directive should contain (1) total dose (2) dose per fraction (3) treatment site (4) overall treatment period (5) treatment plan (6) all of them.

Answer: 6

3. Patient should be identified by (1) therapist's memory on patient name (2) calling patient name to see who answers (3) at least two methods to identify patient (4) one method to identify patient.

Answer: 3

4. When will therapist fill out patient treatment record?

(1) before treatment (2) during treatment (3) after treatment (4) any time therapist is available.

Answer: 3

5. Which of the following is misadministration?

(1) treatment was given to wrong patient (2) treatment was given to wrong site (3) treatment was given by using wrong energy (4) all of them.

Answer: 4

6. If isodose plan "Isodose Level I Tx upon Department protocol" is marked, it means

(1) call physicist to ask the plan (2) ask doctor the treatment plan (3) ask supervisor (4) follow the Department protocol.

Answer: 4

7. If you have question concerning the written directive, you should (1) ask your co-worker to explain (2) ask supervisor (3) ask physicist (4) ask doctor to clarify.

Answer: 4

8. If patient has a c/d treatment for lung cancer, you must check the written directive for the c/d fields and you must ensure at the completeness of the last treatment before c/d. T / F

Circle one T

9. When therapists set the treatment time or monitor unit, one therapist sets the time; another therapist will (1) watch patient (2) complete chart (3) carry out "double check" (4) do nothing.

Answer: 3

10. If the total number of fractions is less than 3, the calculation check must be done (1) before the 3rd treatment (2) before the 2nd treatment (3) before the last treatment (4) before the first treatment.

Answer: 4

11. Upon Department policy, when will you give the chart to the physicist to check? (1) after 2nd treatment (2) after 5th treatment (3) if therapist remember (4) after 3rd treatment and continuing every five treatments.

Answer: 4

12. When the physicist is absent, the assigned therapist will perform an independent calculation. The assigned therapist is (1) therapist does the original calculation (2) therapist assigned by physicist (3) any therapist who did not perform the original calculation (4) all of them.

Answer: 3

13. Which of the following is emergent situation?

(1) patient treatment schedule is one hour late (2) patient has cord compression to treat (3) doctor has another patient to take care (4) patient's transportation is waiting to leave

Answer: 2

14. If doctor add a new area to a existing treatment, you must check the written directive for the new added area and you must check the written directive of the existing treatment. T / F

Circle one T

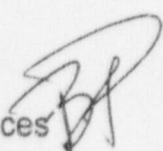
1,2,3,4,5,6,7,9,10,11,12,13 7 points/each

8 and 14 8 points/each

MedCentral Health System

MEMORANDUM

TO: Dr. David Y. Chin, Ph.D.
Radiation Safety Officer
MedCentral Health System

FROM: Brad Peffley, Vice President Clinical Services 

DATE: February 20, 1998

SUBJECT: Revised QMP and Implementation

I have reviewed the revised Quality Management Plan and look forward to working with you, Dr. Koh, Terry Baker, Angela Scott, and the Radiation Therapy staff to implement it. I feel confident that by following this plan we can continue to provide quality radiation therapy to our patients and continue to improve.

If you have any questions please let me know.

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