Management of Radiotherapy Skin Reactions

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

These guidelines are based on evidence from The Society of Radiographers, The Leeds Cancer Centre, The Arden Centre and NHS Quality Improvement Scotland.

They have been adapted for use by the Worcester Oncology Centre by Parisa David – Macmillan Specialist Radiographer.

Introduction

Goals of Care for Skin Reactions during Radiotherapy:

1. Initially maintaining integrity and hydration of the skin
2. Reducing potential for further exacerbation of the skin reaction
3. Promotion of comfort and compliance
4. Reduction of pain
5. Protection from trauma
6. Prevention of infection
7. Promotion of a moist wound healing environment, in the stages where skin is broken
8. Control of bleeding, odour and excessive exudate, where radiotherapy is given for symptom control

This guideline is for use by the following staff groups:

Radiotherapy Skin care is clinical practice; therefore guidelines are recommended for all associated health professionals to follow.

Lead Clinician(s)	
Lisa Capaldi	Consultant, Oncology
Approved by Directorate Meeting - Haematology, Oncology, & Palliative Care on:	11th May 2018
Review Date: This is the most current document and is to be used until a revised version is available	11th November 2020

Key amendments to this guideline

Date	Amendment	Approved by:
Feb 2016	New document	
December 2017	Sentence added in at the request of the Coroner	
December 2017	Document extended for 3 months as per TLG recommendation	TLG
January 2018	Change in specific patient groups that require skin RTOG score to include only those at higher risk e.g. head and neck and breast, not all sites. The results of skin care audit from Society of Radiographers (2015) shows no evidence that using specific creams on skin will ease or prevent skin reaction. Change in Trust personnel	Laura Lees
May 2020	Document extended for 6 months during COVID-19	

Management of Radiotherapy Skin Reactions

Introduction

The purpose of this document is to give a more in depth introduction to the skin care guidelines and include the reasons for its production and why it is important.

Details of Guideline

Key Recommendations for Best Practice

- On commencement of Radiotherapy a skin assessment of patients who are at high risk of developing a skin reaction in the treated area (e.g. head and neck, breast) is conducted to identify pre disposing factors which could affect the severity of the skin reaction

- A baseline Radiation Oncology Toxicity Scoring (RTOG) will be documented using the skin assessment chart in the Worcester oncology software computer system known as MOSAIQ The modified RTOG grading scale should be used to assess skin throughout the course of radiotherapy until the reaction has settled (see appendix A for RTOG table)

- Those assessing the skin should be able to demonstrate knowledge and competence in the management of radiotherapy skin reactions. (See appendix B for competency sheet)

- Prior to commencing radiotherapy, all patients who are at risk of developing a radiotherapy skin reaction should receive verbal and written information and advice about skincare including the Radiotherapy Treatment – Skin Care Advice for Patients **(WHAT-IS-PI-016**

- The treating radiographers should provide verbal advice and a skincare information letter specifically for their treatment area if at high risk of developing a post radiotherapy skin reaction. (H&N, Breast) (See appendix C)

- At present there is no evidence to use specific skin care products in the treatment field whilst the skin is intact. The general advice is that if patients would like to use a moisturising cream it should ideally be unperfumed and Sodium Lauryl Sulfate free as this is known to be a chemical irritant. Aqueous cream is no longer recommended as a leave on moisturising cream as it can dry the skin. 26

- If the skin becomes broken in the treated area, the use of all topical products should be discontinued and an appropriate dressing applied.

- Referral to the review team for skincare advice and further assessment should be made if:

1. Skin in the treated area breaks (RTOG 2.5 and above) or dressings are required
2. The skin reaction is greater than the anticipated grade for fractionation and dose delivered so far
3. The skin in the treated area becomes irritated by the skin care product used
4. The skin care product does not relieve the discomfort caused by the skin reaction
5. Additional advice is required regarding a patient's skin care regimen, or

6. There are specific concerns relating to the patient's skin reaction

- Every appropriate patient's skin reaction should be assessed at the end of treatment to identify the need for any continuing assessment and management. The skin reaction grade should be documented using the skin assessment chart in MOSAIQ.

- Upon completion of the radiotherapy course, a referral should be made to an appropriate health care professional: Macmillan Specialist Radiographer, Radiotherapy Specialist Nurse, District Nurse, or CNS, if:

1. A skin reaction requires on going assessment and management post completion of radiotherapy
2. It is anticipated that the grade of the skin reaction will progress to RTOG 2.5 or above
3. Additional advice is required regarding a patient's skin care regimen
4. The patient's management of their skin reaction isn't optimum, or
5. There are specific concerns relating to the patient's skin reaction

Associated health professionals will be periodically informed about any update in these guidelines.

The guidelines will be reviewed if any clinically significant new evidence is found

Staff Education and Training

It is recommended that all healthcare professionals who are responsible for assessing, managing and documenting a patient's skin condition pre, during and post radiotherapy, have the following knowledge and skills:

1. Ability to provide patient information and advice
2. Knowledge of predisposing factors
3. Ability to assess and to and grade skin reactions according to the RTOG scale (see appendix A)
4. Knowledge of current best practice and evidence based care as recommended in these guidelines
5. Have completed radiotherapy skin care competencies (see appendix B)
6. Recognise the limitations of their scope of practice and when to contact the Macmillan Specialist Radiographer, Radiotherapy Specialist Nurse or Tissue Viability Nurse.

Aims and Objectives

These guidelines are for the use of all health care professionals involved in the management of radiotherapy induced skin reactions of adults receiving external beam radiotherapy.

These guidelines aim to ensure radiotherapy patients receive consistent, evidence based, best practice advice and care through:

1. Consistent assessment and documentation of these reactions, using the RTOG assessment and grading tool
2. Implementation and on-going evaluation of recommended interventions which aim to:
3. Delay onset of the reactions
4. Minimise exacerbation of reaction where possible
5. Prevent exacerbation of reaction
6. Optimise patient comfort

7. Increasing multidisciplinary knowledge across the oncology centre, hospital trust and primary care teams

Radiotherapy

In the context of current treatment methods and practice, approximately half of those diagnosed with cancer will receive radiotherapy at some stage of their illness[1]. Radiotherapy can be for the curative or palliative treatment of cancer and is often delivered in combination with chemotherapy treatment[2]. Radiotherapy, along with surgery and chemotherapy, is a major modality in the management of cancer. Most commonly, radiotherapy is delivered by a linear accelerator with the beam directed to the tumour. This is termed external beam therapy and accounts for more than 95% of all radiotherapy delivered to cancer patients.

Radiotherapy and skincare

All patients receiving external beam radiotherapy are at risk of skin damage[3]. It is essential that this damage is minimised as far as possible and where skin damage does occur, staff should take steps to minimise further damage and promote effective healing.

There are a few randomised controlled trials to evaluate prophylactic skincare procedures[4] and a few relating to the treatment of radiation damaged skin[5]. The guidance provided within these guidelines has been drawn from robust and reliable research evidence which has been published. However, where such evidence does not exist, it has relied on expert consensus from specialists.
A 2015 country wide skin audit on different products used across Oncology departments has found there is no evidence for using any particular moisturising cream.
The general advice is to suggest patients may use any cream providing it is sodium lauryl sulfate free (a known chemical irritant) and preferably unperfumed. 26

How radiotherapy affects the skin

The biological effect of radiation commences with the absorption of energy from ionising radiation. Radiobiological damage affects regeneration of the skin and the process of repair, redistribution, repopulation and reoxygenation[6]. The inflammatory response activated is a normal physiological response to radiation therapy. Despite improved delivery techniques, healthy tissue within the radiation treatment area may still be damaged. Subsequently, the most vulnerable layer of the epidermis to sustain damage is the basal cell layer (stratum germinativum). Any skin damage resulting from radiotherapy treatment may manifest itself during treatment and approximately 10-14 days post-treatment. This coincides with the time when damaged basal cells migrate to the skin surface. The skin compensates by increasing mitotic activity in an attempt to replace damaged cells. Cells produced tend to be immature and are vulnerable to normal wear and tear on the skin surface. If the new cells reproduce faster than the old cells can shed, the skin becomes scaly and thickened (dry desquamation)[7]. Alternatively, if the dead cells shed before new cells have replaced them, the skin will appear thin, eroded, broken or atrophic (moist desquamation)[7].

The rate of mitosis initially decreases[8]when skin is exposed to low doses of radiation, which may result in minimal disruption to the basal cell layer. Intermediate doses may result in some basal cells being destroyed and, as a result, dry desquamation occurs. When radiation associated damage is severe enough, stem cells undergo apoptosis and die, the epidermis sloughs off, producing moist desquamation. With advanced techniques in treatment delivery, patients should no longer experience the final stage of skin necrosis, referred to in some classifications of radiation skin toxicity.

Initially, radiotherapy stimulates melanocyte production, which may give the skin a darker appearance. Skin appendages such as hair, sebaceous glands and sweat glands in the treatment area are also affected; their functions may lessen or cease altogether[9].

Thereafter, skin that has been irradiated may be changed permanently. A previously irradiated site often takes on a typical appearance, with loss of pigmentation (due to destruction of melanocytes), indentation (due to fibrosis of collagen and supporting structures in the dermis) and occasionally telangiectasia, which appears as spidery red lines across the skin surface (due to fibrosis of the blood vessels). These fibrotic changes will result in the area being permanently prone to poor healing[10].

Risk factors for radiotherapy skin reactions

Age
The epidermal turnover decreases with age resulting in extended healing times, and ageing results in atrophy of the dermis. Different age ranges are often linked with co-existing diseases. However, there is a lack of evidence to define the older patient, but the National Library of Medicine categorises adult ages as follows: adult 19-44 years, middle aged 45–64 years, aged 65-79 years and aged, 80 and over[11].

Chemical irritants
Application of chemical irritants such as perfume and aftershave to the treatment area should be avoided as they can increase skin reactions.

Chemotherapy
Some chemotherapeutic agents may cause increased skin reactions. Some are radiosensitisors (e.g. Fluorouracil, Mitomycin C, Cisplatin)
Cetuximab can cause an acne-like rash to the face, neck and body.

Co-existing disease
Illness or medication can have a direct effect on the skin healing process, eg diabetes[13] and steroids. Most co-existing diseases are linked with an increase in age as well as with changes in BMI and/or nutritional status.

Ethnic origin/skin diversity
There is insufficient evidence to support the theory that the risk of skin reaction increases in different ethnic groups. Ethnic origin can often be linked with previous exposure to ultraviolet light and to genetic predisposition. It is known that chronic ultraviolet light exposure, which would include therapy for skin conditions, may impair healing within the skin[14].

Infection
Any bacterial and/or fungal infection can damage basal layer cells and impede healing[15].

Inherited radiosensitivity
Some genetic disorders such as ataxia-telangiectasia can increase sensitivity to radiation therapy. There are also theories that mutations in genetic material can predispose individuals to an increased risk of skin reactions, although there is no firm evidence to date.

Mechanical irritants
Friction, e.g. clothing and shaving, can increase skin reaction and cause delayed healing.

Nutritional status
The intake of adequate nutrients is required for optimum repair of tissue damage. Intake of such nutrients may be influenced or directly linked with co-existing diseases and/or stage of cancer and/or cancer site. Absorption of such nutrients may be inhibited by disease, chemotherapy or other drug therapy. Fatigue and socio-economic factors can also influence the nutrient balance or intake of an individual.

Obesity
Having excess adipose tissue can compromise healing due to poor vascularity and is linked with extra skin folds; friction, moisture and warmth which will increase skin reactions. This increase in moist warm folds can also lead to a greater risk of fungal infections.

Previously irradiated areas
These areas may be more at risk of acute skin reactions, as palliative treatment to a previously radiated area may also increase the risk of skin reactions.

Smoking
Inhaling nicotine through smoking can impair the body's response to infection and healing. It also limits the oxygen carrying capacity by replacing oxygen with carbon monoxide. Patients should be fully aware and encouraged to stop smoking prior to treatment. Referrals to appropriate smoking cessation services are recommended.

Thermal irritants
Direct application of extremes of temperature, ie icepacks or heat (heat pads, hot water bottles or sun lamps), onto the treatment area can cause skin irritation and thus delay healing.

Radiotherapy
Higher doses and increased volume of radiation will lead to greater risks of skin reactions.

Energy of beam
Megavoltage (MV) photon energies (energies above 1MV) deliver maximum dose underneath the skin surface. This is known as the skin sparing effect. Kilovoltage beams (energies below 1MV) will deliver maximum dose to the skin surface, thus causing an increased skin reaction[16].

Entry and exit sites
It is worth noting that apparently 'unrelated' skin reactions may be due to the exit site dose of the beam, eg a skin reaction on the back of the shoulder which is the result of an anterior supraclavicular fossa field on a breast patient.

Use of build-up material (also known as 'bolus')
Where tissue equivalent build-up material is placed over the treatment area, the dose to the skin is intentionally increased as part of the treatment plan, and therefore the skin reaction is likely to be worse.

Site of treatment
Some sites of the body will tend to show an increased skin reaction following radiotherapy. In general, areas of the body most at risk include underneath the breast, axilla, head and neck, perineum and groin[17].

Treatment regimes
Different treatment regimens may be associated with increased skin toxicities due to different treatment doses.

IMRT and VMAT delivery techniques can reduce the severity of the skin reaction.

Dermatological Conditions

For patients with chronic skin problems, their dermatology specialist may also need to be consulted for further advice before making changes to their skincare regimen.

Care should be taken with patients with pre-existing skin conditions affecting the area to be treated. Such patients should be assessed by the Macmillan Specialist Radiographer or The radiotherapy Specialist Nurse at the start of their treatment.

All patients receiving radiotherapy should be advised of the following skincare guidelines. All patients should receive a copy of the information below, as appropriate, in both verbal and written formats[18].

THIS GUIDELINE ONLY APPLIES TO THE AREA BEING TREATED, INCLUDING BOTH THE ENTRY AND EXIT SITES

When washing/bathing/showering on a daily basis:

- Use warm/tepid water, with unperfumed soap if desired.
- Do NOT use perfumed products[19].
- Avoid rubbing the area and use a soft towel to pat the area dry (avoiding friction).

Other skincare products:

- Do NOT apply perfume or aftershave to the treatment area[19].
- You may use a roll on deodorant on intact skin but stop if irritation occurs[20].
- Only use products advocated by the radiotherapy treatment centre.
- All gels, creams or lotions for skin application should be used at room temperature. If normally stored in a refrigerator, these should be removed from the refrigerator half an hour before use[21].

Hair removal:

- Use an electric shaver instead of a wet razor when shaving the face.
- If the axilla is within the treatment area, shaving should be avoided.
- Do NOT use wax or other hair removing creams within the treatment area.

Use of swimming pools:

- Caution should be taken as chlorinated water can have a drying effect on the skin.
- Care should be taken regarding the use of showers particularly where there is no temperature control or where jets are very powerful[10].

General advice:

• Avoid direct application of heat or cold to the area.

• Friction will be reduced with the avoidance of scratching, rubbing and massaging the skin.

• Loose natural fibre clothing will help avoid friction.

• Following mastectomy, if a permanent prosthesis causes increased moisture and/or friction, a soft prosthesis should be worn.

• Use of a mild detergent (fragrance-free if possible), for washing clothing to be worn next to the skin, may reduce irritation.

• Adhesive tape should always be avoided within the treatment area during treatment and until any reaction has settled.

• Avoid sun exposure or cover the area during treatment and until any skin reaction has settled. There is a permanent risk of developing a skin cancer at the irradiated site, so appropriate protective measures should continue indefinitely, particularly when the irradiated area is a habitually sun-exposed site.

• Use sunscreen, e.g. sunblock of at least SPF 15 (health promotion advice advocates that nothing less than SPF 15 should be used by anyone at any time, regardless of skin type or past medical history.) Sunscreen should be used as an addition to sun avoidance or other protective measures for sun exposure (e.g. a hat) but should not lead to increased time in the sun[22]. Irradiated skin will always be at risk of sun damage[23].

• If you have any concerns regarding your skin during your treatment, contact your radiographer/radiotherapy nurse. Local contact details should be given for in and out-of-hours.

• If you have any concerns regarding your skin after your treatment, contact your district or practice nurse. Local contact details should be given for in and out-of-hours.

Classification of Skin Reaction

The RTOG scoring criteria does not account for the subjective aspects of the skin reaction such as pain and discomfort. Therefore part of the of the Radiation induced skin reaction assessment scale (RISRAS) will be utilised alongside the RTOG classification system to capture this. The RISRAS assessment tool is a well validated measurement tool for this population. (See appendix A)

All assessments are valid whilst on radiotherapy treatment and up to 3 weeks post treatment

Management of Radiotherapy Induced Skin Reactions			
Assessment	**Intervention**	**Rationale**	**How to demonstrate this is achieved**
RTOG0 No visible change to the skin	Patients will be advised to follow the skincare guideline Patients may use an unperfumed preparation for comfort if they wish. Ensure patient has received a Skin Care during Radiotherapy leaflet	To avoid unnecessary further trauma to the skin. To promote comfort in those who wish to use cream. To promote participation in in self-care To inform patient of potential skin reaction	Skin is soft, supple, clean, odour-free and intact on examination during treatment. The cream the patient is using will be documented in MOSAIQ. RTOG grade is documented weekly in MOSAIQ.
RTOG1 Faint or dull erythema Mild tightness of skin, itching (pruritus)	Patients will continue to follow the skincare guideline Patients may use an unperfumed preparation for comfort if they wish. Alternative specialist creams may be indicated Consider analgesia as guided by WHO analgesic ladder	To reduce risk of introducing unnecessary irritants to the treatment area. To reduce irritation and promote comfort	Skin is soft, supple, clean and odour-free on examination during treatment. RTOG is documented weekly in MOSAIQ. Record any symptoms reported by the patient, e.g. 'itchy', 'warm' in MOSAIQ.
RTOG2 Brisk Erythema and/or Dry desquamation Moderate oedema may develop Skin may feel sore, itchy and tight	Patients will continue to follow the skincare guideline Patients may use an unperfumed preparation for comfort if they wish, unless there is evidence that it is no longer keeping the patient comfortable. A change of topical agent may be necessary if comfort is not achieved There is some evidence to	Patients need reassurance that this is a normal response to radiotherapy treatment. There is also evidence that topical steroids can make skin thinner and more fragile so caution is advised.	Check that advice is understood and patient is adhering to guidelines. RTOG is documented daily in MOSAIQ. It has been documented that a change in topical treatment has been explored. Itching ceases and the topical agent is no longer required.

	support the use of topical agents (eg topical mild steroid cream such as hydrocortisone) to reduce itching. (This should not be a routine therapy and should only be given by a member of the review team or consultant) Avoid topical mild steroid cream if skin is broken or there are any signs of infection[24] Commence analgesia as guided by WHO analgesic ladder		Hydrocortisone cream should not be used for more than 7 days. Reduction in anxiety and improved understanding of the skin reaction.
RTOG2b Patchy moist desquamation; moderate oedema – the integrity of the skin is now compromised:	Patients may continue to follow the skincare guideline Previous creams may still be used in non-moist areas. The principles of moist wound healing should apply to reduce further unnecessary deterioration, promote a healing environment, prevent infection and control pain. Continue analgesia as guided by analgesic ladder Unless treatment has been planned with the dressing in place, the dressing must be removed. Avoid adhesive and adherent dressings and the use of tape to secure dressings. Consider the use of tubular bandages or body stockings.	Optimum healing is at body temperature in a moist environment. Pain is reduced when nerve endings are moist. This may be achieved by the use of dressings. Healing will be delayed/reduced until the end of radiotherapy Reduce risk of complications of further trauma and infection Dressings may alter the radiation dose to the treatment area unless treatment has been planned with a dressing in place. This is also likely to enhance the radiation reaction. Dressings with adhesive borders may cause epidermal stripping and cause pain to the patient on removal.	Check that advice is understood and patient is adhering to guideline. RTOG grade is documented daily. Use and type of dressings is documented. Patient is infection free and comfortable. Any dressing covering the treatment area during treatment delivery is documented. There are no signs or symptoms of trauma on dressing removal. Surrounding skin remains intact. Record patient comfort with skincare and dressing.

RTOG3 confluent moist desquamation; pitting oedema	Patients may continue to follow the skincare guideline	Reduce risk of complications of further trauma and infections	Condition of area will be assessed daily, non-adherent dressings renewed and any changes documented.
	Painful moist areas are present which will be treated daily with appropriate dressing	Dressings, which can be removed without leaving any residue on the wound, are preferred. They will not interfere with the treatment area and will not cause pain or trauma on removal.	Patient comfort is documented. Use and removal prior to treatment of activated silver or iodine based dressings is documented.
	Do not remove exudate from reaction site unless excessive The area will be observed for infection (particularly in the skin folds). If there are signs of localised clinical infection, i.e. exudate which may be yellow/green and sticky, increased exudate and malodour developing with oedema and redness:	The exudate bathes the exposed nerve endings, providing pain relief. To promote recovery of skin by maintaining a moist wound environment.	Changes in the patient's general condition are documented. Health professionals should be aware of concomitant treatment
	<u>On Radiotherapy</u> Antibiotics may be commenced (as clinically indicated) DRESSINGS, CONTAINING SILVER KNOWN TO BE TAKEN UP INTO TISSUE, MUST BE AVOIDED.	Antibiotics are required to stop infection	Resolution of signs of infection
	<u>Post Radiotherapy</u> Topical anti-microbial dressings may be used, e.g. activated silver or iodine based. Patients may be immuno-compromised and may not exhibit classic signs of infection (e.g. raised temperature, white blood cell count or ESR).	Topical anti-microbials will reduce the bacterial burden and reduce the risk of systemic infection developing To relieve pain/soreness	

	Consider increasing analgesia as guided by WHO analgesic ladder		
	Signs of spreading cellulitis (redness beyond the treatment area) may indicate the onset of systemic infection and either oral or intravenous antibiotics should be commenced (as clinically indicated). These may be used in conjunction with topical anti-microbials.	In all instances of spreading cellulitis, antibiotics are required to prevent septicaemia	Resolution of signs of clinical infection.
	Use of bacteriology wound swabs should not be routinely used.	Bacteriology wound swabs are only necessary if antibiotics are being commenced	Rationale for the use of swabs is documented.
	If pyrexia (temperature > 38C) or clinical signs of systemic infection are apparent, bacterial swab and blood cultures may be indicated	If systemic infection is suspected, antibiotics based on advice of oncologist and microbiologist should be commenced immediately to avoid septicaemia. Swabbing or blood cultures may be required to confirm the strain of bacteria.	Resolution of signs of clinical infection.
	On completion of radiotherapy treatment, the patient will be referred, as required, and agreed with the patient, on to their local practice/district nurse or arrangements will be made for the patient to return to the Oncology Centre. Local practices must be able to provide care appropriate to patients needs after radiotherapy treatment[18].	To provide continuity and to establish a partnership of care for the patient. Reduce patient anxiety following post treatment referral from Worcester Oncology Centre[18]. Referral is documented in MOSAIQ.	Any intervention to the wound is documented in MOSAIQ and skincare discharge letter
Delayed skin reactions to radiotherapy more than 3 weeks after radiotherapy has been completed			
.	Patients will be reminded about potential skin reactions that may follow	Reduction of patient anxiety.	Documentation that information has been delivered

	treatment. Patients believe it is beneficial to receive this information both before and after treatment[25] Patients will be aware of any permanent radiotherapy related side-effects to the skin, e.g. dryness of skin, reduction of skin elasticity, increased skin sensitivity	Prompt reporting of significant reactions.	Documentation that information has been delivered.
RTOG4 Ulceration, necrosis	Seek specialist advice i.e. Clinical Consultant, Tissue Viability Nurse		

RTOG Dressing Selection	
RTOG 0	Apply mild moisturiser if patient wishes too. Apply **Sorbaderm®** barrier cream or spray prophylactically if treatment in a fragile area
RTOG 1	Apply moisturiser if patient wishes to possibly soothe erythema
RTOG 2	Apply **Sorbaderm®** barrier cream or spray if the skin is intact Burning sensation i.e. Sore Nipples consider **Actiform Cool®** **1% hydrocortisone** BD for pruritis **Polymem®** Range of dressings **Siltape®**
RTOG 2.5	**Polymem®** range of dressings Apply **Sorbaderm®** barrier film range for broken skin **Siltape®** Burning sensation i.e. Sore Nipples consider **Actiform Cool®** **Duoderm®** for Head/Neck patients, around ears
RTOG 3	**Polymem** ®Range of dressings
RTOG 4	Contact Clinical Consultant or Tissue Viability Nurses for urgent assessment
Malodourous Wounds	Please refer to tissue viability skincare guidelines

Name of Dressing/Product	When to use	How to apply	Frequency of Change/Application
A non-perfumed, sodium-lauryl-sulfate free moisturising agent, A couple of these are listed below; however there is no evidence to support their use. 26 1. **Hydromol Cream** 2. **Zerobase Cream**	If skin becomes itchy or uncomfortable, may apply to intact skin to see if it helps to soothe discomfort.	Cream must not be too thick to avoid excessive friction when rubbing into skin	Apply sparingly twice per day. Number of application can be increased if irritation persists but care must be taken not to allow a build-up of the cream as this can have a bolus effect
Actiform Cool® A non-adhesive high water content hydrogel sheet	On painful low or moderate exuding wounds or Topical relief of itching/burning sensation	Apply directly to area	Change as required and/or when it becomes cloudy, opaque or starts disintegrating
Hydrocortisone Cream 1%	Only to be used for severe pruritis	Apply to unbroken skin sparingly Stop using if skin is broken	Apply as instructed Do not use for more than twice daily or more than 7 days
Proctosedyl® ointment	Apply after painful defecation	Apply directly externally around anus to clean skin Use sparingly as contains 0.5% hydrocortisone	Apply after each bowel motion Do not use for more than 7 days
Sorbaderm® (cream or spray) A non-sting barrier film which is alcohol free. Forms a transparent coating on skin	Sorbaderm provides skin protection from body fluids Also provides moisture to dry skin	Apply directly onto skin in a very thin layer Make sure product is dry before applying clothing/dressings	Apply daily although can be left up to 72 hours
BeneHold TASA™ A thin absorbent wound dressing	Low- moderate exuding wounds in difficult to dress areas i.e.	Apply directly to wound Can keep on up	

	behind ear lobe (when ear causes a bolus effect)	to 7 days	
Polymem® A foam dressing that contains a cleanser, moisturiser and absorbing agent all held within a polyurethane matrix	Low – moderate exuding wounds (Polymem and Polymem roll) Moderate – high exuding wounds (Polymem Max)	Apply directly onto wound with overlap margin of 1-2 cm Apply with printed side facing outwards Can be cut to size	Daily during radiotherapy or dependent on amount of exudate produced by the wound Change when strikethrough with 1-2 cm of dressing edges
Siltape® A silicone conformable self-adhesive tape Minimises trauma and pain during dressing changes	In difficult to dress wounds where non-adhesive dressings require fixation to maintain contact with wound bed	Self-adhesive tape	As required

Monitoring Tool

Page/ Section of Key Document	Key control:	Checks to be carried out to confirm compliance with the policy:	How often the check will be carried out:	Responsible for carrying out the check:	Results of check reported to: *(Responsible for also ensuring actions are developed to address any areas of non-compliance)*	Frequency of reporting:
	WHAT?	**HOW?**	**WHEN?**	**WHO?**	**WHERE?**	**WHEN?**
	The effects of Radiotherapy on the Skin 1. Patients have had their skin formally assessed prior to, during radiotherapy and at end of treatment 2. Patients and Carer (s) have been provided with verbal and written information regarding their skincare prior to commencing radiotherapy treatment	Patient record audit Patient Record Audit Patient Questionnaire	1 x per year	Macmillan Radiographer	Quality Assurance Radiographer	1 x per year
	Skin Assessment 1. Health professionals are knowledgeable about the range of direct and indirect risk factors that can influence the risk of radiotherapy skin reactions 2. A validated assessment tool has been used to assess the degree of radiation toxicity	Training Competency Record Patient Record Audit	1 x per year	Macmillan Radiographer	Quality Assurance Radiographer	1 x per year

	3. Health professionals involved in the use of validated assessment **4.** tools have received training on their use	Training Competency Record				
	Skincare Management **1.** Patients understand how to care for the treated area in accordance to the basic skincare guideline and have been provided with written guidance on this 2. Health professionals are aware of the RTOG skin assessment tool and provide care to patients according to the appropriate RTOG status of the patient	Patient Questionnaire Patient Record Audit	1 x per year	Macmillan Radiographer	Quality Assurance Radiographer	1 x per year
	Communication of best practice for radiotherapy skincare and multidisciplinary teamwork 1. The Radiotherapy department has a strategy in place to ensure the communication of best practice to the appropriate healthcare professionals before, during and after radiotherapy 2. Health professionals work in partnership with patients and carer(s) in the management of skincare for patients receiving radiotherapy.	Patient record Audit I.e. Have end of treatment skincare letters been given out Patient Record Audit Patient Questionnaire	1 x per year	Macmillan Radiographer	Quality Assurance Radiographer	Quality Assurance Radiographer

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Glossary

Body Mass Index	A key index for relating a person's body weight to their height. The body mass index (BMI) is a person's weight in kilograms (kg) divided by their height in meters (m) squared.
Bolus	Tissue equivalent material, eg wax, used to therapeutically increase the dose to the skin.
Cetuximab	A monoclonal antibody used as a radiosensitiser for bowel and head and neck cancers.
Dry desquamation	Flaking or peeling of the skin
Entry and Exit Site	'Entry site' is the area through which the radiation beam enters the body. 'Exit site' is the area through which the radiation beam leaves the body. Radiation beams travel in straight lines so the exit site should be predictable.
Erythema	Reddening of the skin
IMRT	Intensity Modulated Radiotherapy a radiotherapy treatment technique designed to deliver a precise dose to the treatment area with minimal dose to the surrounding tissues.
Linear Accelerator	Radiotherapy machine which delivers external beam therapy.
Moist desquamation	Flaking or peeling of the skin revealing moist areas
Radiosensitisers	Drugs which enhance the effect of radiation
Repair, redistribution, repopulation and oxygenation	Repair of intracellular sublethal damage by normal cells between fractions is one benefit of fractionation. Redistribution of cells as they move into different phases of the cell cycle within a course of radiotherapy is advantageous as more tumour cells become radiosensitive. Repopulation of normal tissues takes place through cell division at some time during a multi-fraction treatment course. Oxygenated cells are radiosensitive: fractionating the dose allows time between treatments for the tumour to reoxygenate leaving it more liable to cell damage and death.
RISRAS	The Radiation Induced Skin Reaction Assessment Scale
RTOG	Radiation Therapy Oncology Group
Telangiectasia	Visible atypical dilation of the capillaries on

	skin
Treatment area	Area of skin through which the radiation beam passes to treat the tumour site
VMAT	Volumetric Arc Therapy a radiotherapy treatment technique designed to deliver a precise dose to the treatment area with minimal dose to the surrounding tissues, using a continuously moving arc of radiation.

Contribution List

This key document has been circulated to the following individuals for consultation;

Designation
Michelle Price, Radiotherapy Services Manager
Jacky Walters, Deputy Radiotherapy Services Manager
Dr Lisa Capaldi, Lead Oncology Consultant
Lisa Hill Tissue Viability Lead Nurse
Jane Rutter, Project Matron for Chemotherapy and Radiotherapy
Jackie Stephen-Haynes, Professor & Consultant Nurse in Tissue Viability

This key document has been circulated to the chair(s) of the following committee's / groups for comments;

Committee

Supporting Document 1 - Equality Impact Assessment Tool

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

		Yes/No	Comments
1.	**Does the policy/guidance affect one group less or more favourably than another on the basis of:**		
	• Race	No	
	• Ethnic origins (including gypsies and travellers)	No	
	• Nationality	No	
	• Gender	No	
	• Culture	No	
	• Religion or belief	No	
	• Sexual orientation including lesbian, gay and bisexual people	No	
	• Age	No	
2.	**Is there any evidence that some groups are affected differently?**	No	
3.	**If you have identified potential discrimination, are any exceptions valid, legal and/or justifiable?**	No	
4.	**Is the impact of the policy/guidance likely to be negative?**	No	
5.	**If so can the impact be avoided?**	-	
6.	**What alternatives are there to achieving the policy/guidance without the impact?**	-	
7.	**Can we reduce the impact by taking different action?**	-	

If you have identified a potential discriminatory impact of this key document, please refer it to Human Resources, together with any suggestions as to the action required to avoid/reduce this impact.

For advice in respect of answering the above questions, please contact Human Resources.

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	No
2.	Does the implementation of this document require additional revenue	No
3.	Does the implementation of this document require additional manpower	No
4.	Does the implementation of this document release any manpower costs through a change in practice	No
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	No
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval