Whittington Health NHS

Cellulitis in patients with suspected / proven Lymphoedema or Chronic Oedema of the Lower Leg

- Guideline for the management in adults

A joint formulary for primary and secondary care:

Whittington Health including
Islington and Haringey Community Health Services, and
Whittington Hospital.

Subject:	Cellulitis in Lymphoedema
Policy Number	
Ratified By:	Whittington Health Clinical Guideline Committee
Date Ratified:	August 2013 (v2.0)
Version:	2.1
Policy Executive Owner:	Medicine, Frailty & Networked Services ICSU
Designation of Author:	Community Tissue Viability, Community Lymphoedema Team, Microbiology Department and Pharmacy Department.
Name of Assurance Committee:	Whittington Health Antimicrobial Steering Group reporting to the Drugs & Therapeutics Committee
Date Issued:	March 2016
Review Date:	March 2019
Target Audience:	All clinical staff involved in prescribing, dispensing and administering antibiotics. Doctors, nurses and pharmacists.
Key Words:	Lymphoedema, Erysipelas, Lymphangitis, Cellulitis, Chronic Oedema

Version Control Sheet

Version	Date	Author	Status	Comment
1.0	25/07/13	**Development Group** • Marianne Delon (Macmilian Lead Nurse Lymphoedema) • Ai-Nee Lim (Lead Pharmacist, Antimicrobials) **Consultation Group** • Dr Tim Crook (Consultant Oncologist – Breast Cancer) • Dr Michael Kelsey (Consultant Microbiologist)	Inactive	This guideline is based on a Consensus Document produced by medical experts and facilitated by the Lymphoedema Support Network (LSN). The document, originally produced in October 2005, is jointly owned by the British Lymphology Society (BLS) and the Lymphoedema Support Network (LSN).
2.0	10/06/15	**Author** • Ai-Nee Lim (Lead Pharmacist, Antimicrobials) • Joanne Harris (Lymphoedema Nurse) **Consultation Group** • Dr Michael Kelsey (Consultant Microbiologist) • Jane Preece (Tissue Viability Lead Nurse – hospital) • Samantha Grantham (Tissue Viability Lead Nurse – community)	Inactive	Amendments to reflect the updated BLS & LSN consensus document (2015): • Phenoxymethylpenicillin (penicillin V) prophylaxis dose is now based on BMI. • No further significant changes.
2.1	01/03/16	• Ai-Nee Lim (Lead Pharmacist, Antimicrobials) • Dr Julie Andrews (Consultant Microbiologist)	Active	Treatment options for ano-genital cellulitis have been added.

➢ Criteria for use

Adult patients presenting with cellulitis AND suspected / proven lymphoedema or chronic oedema of the lower leg.

Inclusion:

Lymphoedema / chronic oedema is usually diagnosed from the medical history and presenting symptoms which include:

- Swelling which has been present for more than three months, not relived by leg elevation.
- History of lymph node dissection and/or radiotherapy treatment in the adjacent groin/axilla of the affected limb.
- A limb which is larger compared to the contra lateral limb if swelling is unilateral.
- Skin changes such as Papillomatosis and Hyperkeratosis.
- Deepened skin folds.
- Positive Stemmer sign. In a healthy person a fold of skin can be pinched and lifted up at the base of the second toe or middle finger. The Stemmer sign is present and indicative of Lymphoedema when a skin fold cannot be raised (Lymphoedema Framework 2006).
- Lymphorrhoea (leaking lymph from the affected area).
- Recurrent episodes of cellulitis in the same limb.

Please refer to ‘Guide on recognising cellulitis in chronic oedema and lymphoedema’ in Appendix 1.

Exclusion:

These indications should be managed and treated separately from this guideline as appropriate:

- Other Infections e.g. those with a systemic component.
- Venous eczema, contact dermatitis, intertrigo, microtrauma and fungal infection.
- Acute deep vein thrombosis.
- Thrombophlebitis.
- Acute lipodermatosclerosis.
- Lymphangiosarcoma (Stewart-Treves syndrome).

Please also refer to ‘Differential diagnosis’ in Appendix 1.

➢ Background/ introduction

It is estimated that 18% of patients with cellulitis are found to have lymphoedema (Dupuy et al; 1999).

Patients with lymphoedema are at increased risk of acute cellulitis, erysipelas and lymphangitis (often called acute inflammatory episodes) – see guide on recognising cellulitis in chronic oedema and lymphoedema in Appendix 1

Each episode of cellulitis can cause further damage to the lymphatic system, which in turn constitutes an increased risk for cellulitis. Hence, resulting in a vicious cycle between cellulitis and lymphoedema.

It is therefore essential that cellulitis in patients with lymphoedema are recognised and identified appropriately, and treated accordingly – to reduce the risk of worsening lymphoedema and recurrent cellulitis.

In patients with lymphoedema, most episodes of cellulitis / erysipelas are believed to be caused by Group A beta-haemolytic *Streptococci*. However, *Staphylococcus* spp. or other bacteria have occasionally been implicated in some patients.

Presentation:
Episodes may develop over minutes, and may persist over several weeks or be preceded by systemic upset**.**

Symptoms include pain, swelling, warmth, redness, lymphangitis, lymphadenitis, sometimes blistering of affected part. Severe cases have a greater degree of systemic upset, rigor, high fever, headache and vomiting.

IMPORTANT

Prompt treatment of cellulitis/erysipelas is essential to prevent further damage to the lymphatics of the affected part, which may predispose to repeated attacks.

➢ Assessment

For management at home or in hospital, baseline signs and symptoms must be establish to monitor patient's progress:

- Extent and severity of rash – if possible, mark and date the edge of the erythema;
- Level of systemic upset including temperature;
- C-reactive protein (CRP) / erythrocyte sedimentation rate (ESR);
- White blood count (WCC);
- Obtain microbiology culture if cuts or skin breaks present, before starting antibiotic regime. Do not delay antibacterial treatment. Review choice of antibacterial treatment against culture results when available.

It is essential that lymphoedema patients with cellulitis who are managed at home are monitored closely, ideally by the GP or District nurse.

Consider hospital admission if patient fulfil any one of these criteria:

- signs of **severe sepsis** (hypotension, tachycardia, severe pyrexia, confusion, vomiting);
- continuing or deteriorating **systemic signs**, with or without deteriorating local signs, after 48 hours of oral antibacterial treatment;
- unresolved or deteriorating **local signs**, with or without systemic signs, despite trials of first and second line oral antibacterial.

- **Clinical management**

1. Acute attack of cellulitis

1.1 Management at home / outpatient		**Duration**
1st line:	Flucloxacillin 500mg PO 6-hourly	Continue for at least 14 days after the acute episode has responded clinically to treatment → until all signs of acute inflammation have resolved. (NB: Skin changes e.g. discolouration / staining may persist for months or longer following severe cellulitis and do not necessarily require ongoing antibiotics). It may take 1 to 2 months of antibiotics to achieve complete resolution of symptoms.
Penicillin allergy:	Clarithromycin 500mg PO 12-hourly ***If clarithromycin contraindicated e.g. interaction with regular medications such as statins:*** Cefalexin 500mg PO 8-hourly ***OR (if beta-lactam allergy)*** Doxycycline 200mg PO stat then 100mg once a day	
After 48 hours if no or poor response (un-resolving inflammation or development of systemic symptoms), switch to :		
2nd line:	Clindamycin 300mg PO 6-hourly	
For ano-genital cellulitis:	Co-amoxiclav 625mg PO 8-hourly ***OR*** ***If penicillin allergy:*** Ciprofloxacin 500mg PO 12-hourly ***PLUS*** Metronidazole 400mg PO 8-hourly	

1.2 Management in hospital		**Duration**
1st line:	Flucloxacillin 2g IV 6-hourly	Switch to oral treatment when clinically indicated – *see under 1.1 Management at home/outpatient.* If oral treatment inappropriate, consider referral to OPAT service.
2nd line:	Clindamycin 600mg IV 6-hourly	
For ano-genital cellulitis:	Amoxicillin 2g IV 8-hourly ***PLUS*** Gentamicin 7mg/kg IV once a day	

1.3 Adjuvant therapy:

- Bed rest with elevated limb is essential.
- Avoid compression garments during acute attack; however resume wearing compression as soon as affected area is comfortable enough to tolerate them.
- Paracetamol to be administered as necessary. NB: Caution use of NSAIDS e.g. ibuprofen during acute attack as may be associated with necrotising fasciitis.
- Inter digit fungus infection should be treated with terbinafine 1% cream – apply to the affected area(s) twice a day for two weeks.[5]

IMPORTANT

If unusual circumstances e.g. animal bite or lick preceding an attack, or failure to respond to above recommendations, discuss with Microbiology.

2. Recurrent Cellulitis

2.1 Antibiotics 'in case'	
Criteria:	Lymphoedema patients who have had an attack of cellulitis – at high risk of further attacks of cellulitis ***AND*** if going away for a length of time and/or do not have access to immediate medical care e.g. on holiday.
Management:	Patient may be given 2 weeks supply of antibiotics. (see section 1.1 for antibiotic choice and dosage)
Advice:	Patient to start antibiotics immediately when familiar symptoms of cellulitis develops and to seek medical opinion as soon as possible.

2.2 Antibiotic prophylaxis		
Criteria:	Lymphoedema patients who have 2 or more episodes of cellulitis in the affected limb per year.	
Management:	• See below for antibiotic choice and dosage. • Prophylaxis antibiotic therapy should be stopped after 2 years. • However, if relapse occur when prophylaxis is stopped, life-long prophylaxis therapy may be considered.	
	1st line:	Phenoxymethylpenicillin (Penicillin V) - if BMI < 33 = 250mg PO 12 hourly - if BMI ≥ 33 = 500mg PO 12 hourly *(Please refer to the BMI estimation guide in Appendix 2)* ***After one year of successful prophylaxis, daily dose may be reduced to 250mg once a day.***
	Penicillin allergy:	Clarithromycin 250mg PO once a day ***If receiving statin:*** Cefalexin 125mg PO at night ***OR (if beta-lactam allergy):*** Doxycycline 50mg PO once a day
	Ano-genital cellulitis:	Trimethoprim 100mg PO at night
Follow up:	If response inadequate (no reduction in frequency of cellulitis and/or severity of episodes), discuss with Microbiology for possible alternative options.	
Advice:	During an acute attack of cellulitis, antibiotic prophylaxis should be stopped while patient is on a therapeutic course of antibiotic.	

2.3 Other considerations

It is important that any pre-existing lymphoedema is treated and managed appropriately.
All patients should be referred to the Lymphoedema Team:

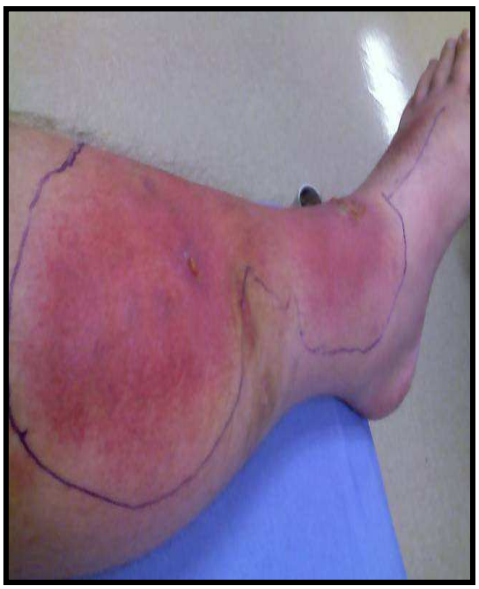
- For patients living in Islington, email to: arti.centralbooking@nhs.net
- For patients living in Haringey, email to: Haringey.adult-referrals@nhs.net

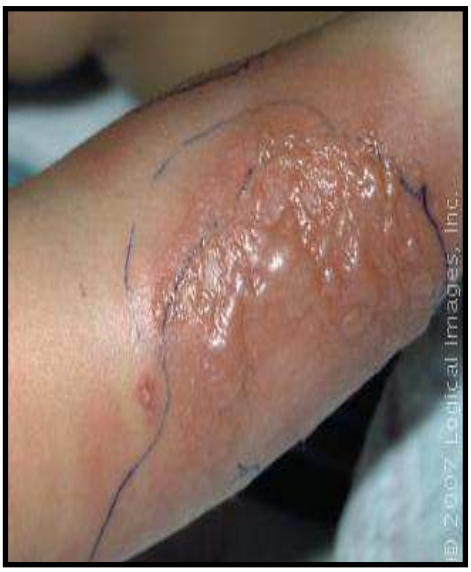
Whittington Health NHS

How to recognise Cellulitis in Chronic Oedema and Lymphoedema

Cellulitis Symptoms:

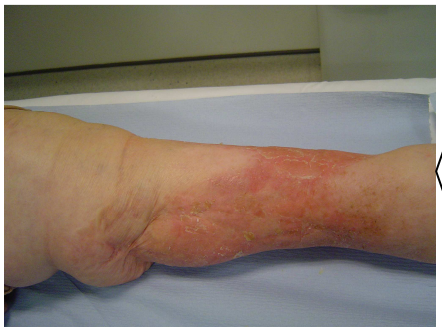
- Increased swelling
- Redness
- Heat compared to surrounding area
- Pain /tenderness
- Sometimes fever, shivers, muscular aches, headache, nausea
- Presentation unlikely to be bilateral





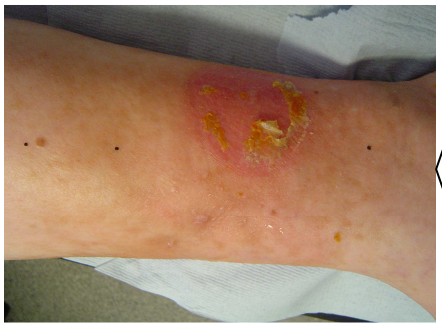
If not cellulitis, consider the following (see below):

Differential diagnosis:



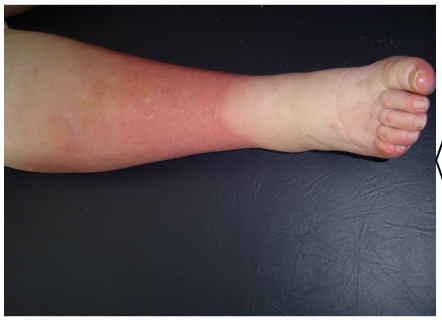
Varicose eczema

Pigmented, inflamed, scaly, itchy skin due to venous hypertension, often warm but no heat.



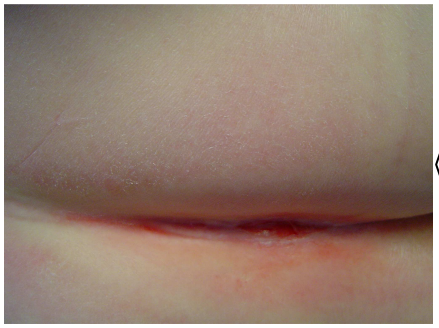
Contact dermatitis

Allergic or irritant reaction, red, itchy, scaly skin may weep or crust, warm but no heat. Usually starts at site of contact of causative material, but may spread.



Acute/chronic lipodermatosclerosis

Pain, thickening of the tissue of the lower leg with swelling due to chronic venous insufficiency and in severe cases damaged lymphatics.



Fungal Infection Intertrigo

Inflammation of skin folds, e.g. groin, under breast and deepened creases on the leg.

It is important to exclude deep vein thrombosis[2].

References:
1.BLS Cellulitis guidelines www.thebls.com/patient/cellulitis
2.Best Practice for the management of lymphoedema international consensus. London MEP ltd 2006

Produced by: Tissue viability/Lymphoedema Team, Whittington Health. Date Produced: November 2011

Appendix 2

BMI Estimation Guide - to be used if unable to obtain patient's height and weight**:**

Estimated BMI ≥ 33 if:				
Height			**Weight**	
5 foot	**1.52 m**	AND WEIGHS OVER	**12 stone 1 lbs**	**77 kg**
5 foot 1 inches	**1.55 m**	AND WEIGHS OVER	**12 stone 7 lbs**	**80 kg**
5 foot 2 inches	**1.57 m**	AND WEIGHS OVER	**12 stone 13 lbs**	**82 kg**
5 foot 3 inches	**1.60 m**	AND WEIGHS OVER	**13 stone 5 lbs**	**85 kg**
5 foot 4 inches	**1.63 m**	AND WEIGHS OVER	**13 stone 11 lbs**	**88 kg**
5 foot 5 inches	**1.65 m**	AND WEIGHS OVER	**14 stone 3 lbs**	**90 kg**
5 foot 6 inches	**1.68 m**	AND WEIGHS OVER	**14 stone 9 lbs**	**93 kg**
5 foot 7 inches	**1.70 m**	AND WEIGHS OVER	**15 stone 1 lbs**	**96 kg**
5 foot 8 inches	**1.73 m**	AND WEIGHS OVER	**15 stone 7 lbs**	**99 kg**
5 foot 9 inches	**1.75 m**	AND WEIGHS OVER	**15 stone 14 lbs**	**102 kg**
5 foot 10 inches	**1.78 m**	AND WEIGHS OVER	**16 stone 6 lbs**	**105 kg**
5 foot 11 inches	**1.80 m**	AND WEIGHS OVER	**16 stone 13 lbs**	**108 kg**
6 foot	**1.83 m**	AND WEIGHS OVER	**17 stone 6 lbs**	**111kg**
6 foot 1 inch	**1.85 m**	AND WEIGHS OVER	**17 stone 13 lbs**	**114 kg**

➢ Contacts (inside and outside the Trust including out-of-hours contacts)

During working hours

Lymphoedema nurse	ext. 02033168702
Dr Tim Crook (Consultant Oncologist – Breast cancer)	07753442921 (Mon & Thurs)
ST doctor in Microbiology	ext. 5085 / 5780 or bleep 3069
Dr Michael Kelsey (Consultant Microbiologist)	ext. 5082
Dr Julie Andrews (Consultant Microbiologist)	ext. 3894
Lead Pharmacist, Antimicrobials	ext. 3732 or bleep 3138
Medicines Information	ext. 5021

Out of hours

On-call ST doctor in Microbiology	aircall via Whittington switchboard
On-call pharmacist	aircall via Whittington switchboard

➢ References (evidence upon which the guideline is based)

1. Dupuy A., Benchikhi H., Roujeau J. C. (1999) Risk factors for erysipelas of the leg (cellulitis): case-control study. *Br Med J.* 318 (7198): 1591 -1594
2. British Lymphology Society (BLS) and The Lymphoedema Support Network (LSN). Consensus document on the management of cellulitis in lymphoedema. Revised April 2015. Available online: http://www.thebls.com/ (Accessed 10/06/2015).
3. Lymphoedema Framework. Best practice for the management of lymphoedema. International consensus. London: MEP Ltd, 2006. Available online: http://www.woundsinternational.com/pdf/content_175.pdf
4. The Lymphoedema Support Network (LSN). Skin care for people with lymphoedema. March 2012. Available online: http://www.nhs.uk/ipgmedia/national/Lymphoedema%20Support%20Network/Assets/Skincare(LSN).pdf
5. Public Health England. Management of infection guidance for primary care for consultation and local adaptation. Published October 2014. Available online: www.gov.uk/phe (Accessed 10/06/2015).

To be completed and attached to any procedural document when submitted to the appropriate committee for consideration and approval

		Yes/No	Comments
1.	**Does the procedural document 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	
	Disability - learning disabilities, physical disability, sensory impairment and mental health problems	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 procedural document likely to be negative?**	No	
5.	**If so can the impact be avoided?**	N/A	
6.	**What alternatives are there to achieving the procedural document without the impact?**	N/A	
7.	**Can we reduce the impact by taking different action?**	N/A	

If you have identified a potential discriminatory impact of this procedural document, please refer it to the Director of 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 the Director of Human Resources.

Checklist for the Review and Approval of Procedural Document

To be completed and attached to any procedural document when submitted to the relevant committee for consideration and approval.

	Title of document being reviewed:	Yes/No	Comments
1.	**Title**		
	Is the title clear and unambiguous?	Yes	
	Is it clear whether the document is a guideline, policy, protocol or standard?	Yes	
2.	**Rationale**		
	Are reasons for development of the document stated?	Yes	
3.	**Development Process**		
	Is it clear that the relevant people/groups have been involved in the development of the document?	Yes	
	Are people involved in the development?	Yes	
	Is there evidence of consultation with stakeholders and users?	Yes	
4.	**Content**		
	Is the objective of the document clear?	Yes	
	Is the target population clear and unambiguous?	Yes	
	Are the intended outcomes described?	Yes	
5.	**Evidence Base**		
	Are key references cited in full?	N/A	
	Are supporting documents referenced?	N/A	
6.	**Approval**		
	Does the document identify which committee/ group will approve it?	Yes	
7.	**Dissemination and Implementation**		
	Is there an outline/plan to identify how this will be done?	Yes	
8.	**Document Control**		
	Does the document identify where it will be held?	Yes	
9.	**Process to Monitor Compliance and Effectiveness**		
	Are there measurable standards or KPIs to support the monitoring of compliance with and	Yes	

	Title of document being reviewed:	Yes/No	Comments
	effectiveness of the document?		
	Is there a plan to review or audit compliance with the document?	Yes	
10.	**Review Date**		
	Is the review date identified?	Yes	
	Is the frequency of review identified? If so is it acceptable?	Yes	
11.	**Overall Responsibility for the Document**		
	Is it clear who will be responsible for co-ordinating the dissemination, implementation and review of the document?	Yes	

Executive Sponsor Approval			
If you approve the document, please sign and date it and forward to the author. Procedural documents will not be forwarded for ratification without Executive Sponsor Approval			
Name		Date	
Signature			
Relevant Committee Approval			
The Director of Nursing and Patient Experience's signature below confirms that this procedural document was ratified by the appropriate Governance Committee.			
Name		Date	
Signature			
Responsible Committee Approval – only applies to reviewed procedural documents with minor changes			
The Committee Chair's signature below confirms that this procedural document was ratified by the responsible Committee			
Name		Date	
Name of Committee		Name & role of Committee Chair	
Signature			

Tool to Develop Monitoring Arrangements for Policies and guidelines

What key element(s) need(s) monitoring as per local approved policy or guidance?	**Who will lead on this aspect of monitoring?** **Name the lead and what is the role of the multidisciplinary team or others if any.**	**What tool will be used to monitor/check/observe/Assess/inspect/ authenticate that everything is working according to this key element from the approved policy?**	**How often is the need to monitor each element?** **How often is the need complete a report ?** **How often is the need to share the report?**	**What committee will the completed report go to?**
Element to be monitored	**Lead**	**Tool**	**Frequency**	**Reporting arrangements**
All lymphoedema patients are appropriately referred to the Lymphoedema team. Appropriate choice and duration of antibacterial therapy.	Respective speciality team supported by the Microbiology & Pharmacy Department.	In-house audit tool	As required.	• Respective departmental meeting • Antimicrobial Steering Group