



Leicestershire Partnership 
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University Hospitals of Leicester 
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Leicester City Clinical Commissioning Group
West Leicestershire Clinical Commissioning Group
East Leicestershire and Rutland Clinical Commissioning Group

Adult Primary Care Cellulitis Pathway

(Excluding Inflammatory Episodes of Lymphoedema)

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Primary Care Cellulitis Pathway

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Primary Care Cellulitis Pathway

Guidance for the treatment of Cellulitis by community staff

Cellulitis is a spreading bacterial infection of the dermis and subcutaneous tissues This pathway will reduce the need for admission as well as the re-admission of patients with recurrence by using best practice in prescribing and treatment.

Clinical assessment in primary care to establish diagnosis and severity based on local and systemic signs, history and investigations.

Clinical history, including

- Previous episodes
- Duration of present episode
- Symptoms of fever
- Itching
- History of local lesions, insect bites, indwelling device, IV drug abuse, injury
- History of other predisposing conditions eg diabetes, lymphoedema, immunosuppression
- History of allergies to penicillin, or cephalosporins
- Social and domestic circumstances

Clinical examination

Outline visible margin of cellulitis with indelible marker to allow subsequent clinical assessment of progress.

Temperature, Blood pressure

Signs of septicaemia (severe pyrexia, tachycardia, hypotension, confusion, tachypnoea, vomiting)

Local clinical presentation

Unilateral or bilateral

Eczematous or cellulitic or both

Evidence of deep vein thrombosis

Lymphangitis, tender regional lymphadenopathy

***Cellulitis is almost always UNILATERAL**

Bilateral lower extremity cellulitis almost never happens, so resist making this diagnosis in patients with bilateral painful red legs with NO fever, white count, LAD, or streaking

Predisposing causes

Lymphoedema, ulcer, lipodermatosclerosis, varicose veins

Peripheral pulses

Toeweb scaling suggestive of candida or tinea

Injury including insect bites, indwelling device

Complicating clinical conditions

e.g. cardiac failure

Underlying malignancy

MRSA carriage

Liver or renal failure

pneumonia

diabetes

Immunodeficiency

Investigations that **may** be indicated **see CREST(2005) document for laboratory advice.**

Swab for causal organism (usually group A Streptococci) if skin integrity broken.

Urinalysis, especially glucose

C-reactive protein

Full blood count especially white cell count and haemoglobin

Blood chemistry, especially LFT and Urea & Electrolytes

Primary Care Cellulitis Pathway

Appropriate resuscitation facilities must be available in the clinical area.

The classification system

Eron LJ (2000) devised this classification system of skin and soft tissue infections to aid the GP/Nurse diagnosis, treatment and admission decisions.

Severity Classification

Class 1 patients neither have features of systemic infection nor any of the comorbidities below

Class 2 patients **EITHER**

- are systemically affected (i.e. have a temperature > 37.9°C or are vomiting)

OR

- have one or more comorbidities; i.e.
 - Peripheral vascular disease
 - Treated diabetes or blood glucose > 11mmol/L
 - Chronic venous insufficiency
 - Morbid obesity (i.e. BMI ≥40)
 - Liver cirrhosis

Class 3 patients **EITHER**

- are clinically unstable, e.g. have
 - Acutely altered mental status
 - Heart rate > 99/min
 - Respiratory rate > 20/min
 - Systolic BP < 100mmHg

OR

- have unstable comorbidities; i.e.
 - Uncontrolled diabetes
 - Varicose ulcer
 - Peripheral vascular disease with critical ischaemia or arterial ulcer

Class 4 patients have a systolic BP of < 90mmHg or other features of severe sepsis or life-threatening infection, such as necrotizing fasciitis (**NB:** Such patients may need surgery)

Clinical findings alone are usually adequate for diagnosing cellulitis, particularly in non-toxic immunocompetent patients.

Primary Care Cellulitis Pathway

Complicated and uncomplicated cellulitis

Please note that only uncomplicated cellulitis is suitable for treatment in the community. This includes Class I & II of the above classification i.e. localised inflammation as a result of skin and soft tissue infection without any systemic upset that involves superficial tissues. Uncomplicated cellulitis is usually caused by a single organism and carries an excellent prognosis. Most patients with uncomplicated cellulitis will respond well to standard oral antibiotics. However, those patient who cannot tolerate oral medications, or are nil by mouth, or do not respond to oral therapy may be selected for outpatient intravenous antibiotics.

Complicated cellulitis on the other hand is invasion of deep tissues and is often polymicrobial in nature. It may be associated with profound systemic upset and may require supportive therapy and surgical intervention in addition to intravenous antibiotics e.g. cellulitis associated with gangrene, necrotizing fasciitis, myonecrosis, abscess formation, diabetic foot ulcer, trauma, infected burns or cellulitis in an immunocompromised patient. Class III & IV of the above classification will fall into complicated cellulitis. Please note that complicated cellulitis is unsuitable for treatment in the community and all cases of complicated cellulitis should be managed in an acute hospital.

For all Lymphoedema patients please refer to LOROS guidelines.

http://www.loros.co.uk/media/uploads/files/healthcare/antimicrobial_guidelines_on_the_lymphoedema_9_14.pdf

Primary Care Cellulitis Pathway

Guidelines for the Treatment of Adult Patient with Cellulitis in Primary Care

Patients with cellulitis considered to be due to MRSA should be discussed with a microbiologist.

****Beware of drug interactions between antibiotics and other medication the patient is currently taking in particular methotrexate****

*Refer to current edition of the BNF for full list of interactions.

Indication	1st Line	Penicillin Allergic Patients
<p>Class 1 Localised cellulitis in otherwise fit individual who can tolerate oral antibiotics</p>	<p>PO Flucloxacillin 1g qds for 7 days</p>	<p>PO Doxycycline 200 mg once daily for 7 days</p>
<p>Class II OR for patients in Class 1 with no response to therapy or deteriorating while on treatment</p> <p>NO RESPONSE - does not mean that the redness is not resolving – this may take some time. It means that the clinical picture is worsening e.g. the redness is spreading beyond the original boundaries and / or the patient is becoming systemically ill</p>	<p>Teicoplanin IV/IM following a tiered dosage regimen based on the weight of the patient as follows:</p> <p>Patients 70kg or below 400mg IV/IM every 12 hours for three administrations (completes Day 1-2) followed by 400mg IV/IM every 24 hours for three administrations (completes Day 3-5).</p> <p>Patients over 70kg-100kg 600mg IV/IM every 12 hours for three administrations (completes Day 1-2) followed by 600mg IV/IM every 24 hours for three administrations (completes Day 3-5).</p> <p>Patients over 100kg 800mg IV/IM every 12 hours for three administrations (completes Day 1-2) followed by 800mg IV/IM every 24 hours for three administrations (completes Day 3-5)</p> <p>Day 6 and 7: PO Flucloxacillin 1g qds</p> <p>IN RENAL IMPAIRMENT eGFR >10ml/min <60ml/min Dosing regimen same as for patients with normal renal function except OMIT FINAL DOSE. Day 6 and 7 PO Flucloxacillin 1g qds daily</p> <p>eGFR <10ml/min – admit to community hospital for IV flucloxacillin</p>	<p>Teicoplanin IV/IM following a tiered dosage regimen based on the weight of the patient as follows:</p> <p>Patients 70kg or below 400mg IV/IM every 12 hours for three administrations (completes Day1-2) followed by 400mg IV/IM every 24 hours for three administrations (completes Day 3-5)</p> <p>Patients over 70kg-100kg 600mg IV/IM every 12 hours for three administrations (completes Day 1-2) followed by 600mg IV/IM every 24 hours for three administrations (completes Day 3-5).</p> <p>Patients over 100kg 800mg IV/IM every 12 hours for three administrations (completes Day 1-2) followed by 800mg IV/IM every 24 hours for three administrations (completes Day 3-5)</p> <p>Day 6 and 7: PO Doxycycline 200 mg daily</p>

Primary Care Cellulitis Pathway

<p>Class II For patients in community hospital or for community hospital patients in class I with no response to therapy or deteriorating while on treatment</p>	<p>Day 1 – 5 IV Flucloxacillin 2g qds daily followed by Day 6 and 7 PO Flucloxacillin 1g qds</p> <p>IN RENAL IMPAIRMENT eGFR>10 dose as in normal renal function eGFR <10 Day 1-5 IV Flucloxacillin 1g qds followed by day 6 and 7 PO Flucloxacillin 1g qds</p>	<p>As Above</p>
<p>Class III & IV For patients with systemic signs of sepsis e.g. fever, tachycardia, hypotension, or rapidly progressing cellulitis, or poor response to 1st or 2nd line therapy in Class 1 or 2</p>	<p>Immediate referral to acute hospital for intravenous antibiotic therapy with IV Flucloxacillin 2g qds for 7 days. (Reduce dose if eGFR <10)</p>	<p>IV Vancomycin 1g bd (if renal impairment or > 65 yrs old, reduce dose to 1g od) for 7 days (Discuss with microbiology in renal impairment)</p>

<p>Notes</p> <ol style="list-style-type: none"> 1. Mark the area of cellulitis with a marker at presentation to measure progress 2. If a patient is switched from Flucloxacillin to Teicoplanin, there is no need to wait before giving the first dose of Teicoplanin, a dose can be given immediately. 3. Patients treated with Teicoplanin require a blood test on day 1 or 2 to check renal function unless there is a recent result available. If there is evidence of RENAL IMPAIRMENT the dose on day 5 should be OMITTED patients will retain sufficient drug plasma levels for the next 1-2 days. 4. A list of all the out of hours Pharmacies that stock IV teicoplanin can be found on the LMSG website Cellulitis Pathway: Community Pharmacies Stocking Teicoplanin 5. Teicoplanin should be given IV or if this is not possible IM 6. If a delay in administration of Teicoplanin occurs due to unavoidable circumstances, the next dose of teicoplanin should be administered as soon as possible 7. A four hour flexibility may be allowed between the first two doses. However the first dose of teicoplanin should be given at such time that the second dose does not fall within unsocial hours. 8. It is important to insist that the patient rests and elevates the leg – Refer to Appendix A (Patient Information Sheet) 9. Rapidly deteriorating cellulitis with purple discoloration and/or severe pain may indicate necrotising fasciitis which is a potential life threatening condition and require immediate hospital admission for surgical debridement and i/v antibiotic therapy 10. Diabetic foot ulcer, Osteomyelitis, decubitus ulcers, chronic stasis ulcers or dermatitis are excluded from the definition of cellulitis. Consider these patients for referral to appropriate expert service 11. Seek advice if patient is pregnant or breast feeding or if there is a history of anaphylaxis to penicillin 12. Contact Microbiologist for further advice if necessary 13. Patients with lymphoedema/Chronic Oedema (of all types) who suffer from recurrent cellulitis can be referred to LOROS. (Excluding those with acute cellulitis as the service is a nurse led clinic)

Primary Care Cellulitis Pathway

Treatment of Cellulitis

Diagnose and treat predisposing causes, including tinea pedis, leg ulcer and lymphoedema

“Patient who have more than two episodes of cellulitis at the same site within one year, should be referred to a dermatologist for specialist advice on further management and consideration for prophylaxis”. <http://cks.nice.org.uk/cellulitis-acute> and <http://www.gain-ni.org/images/Uploads/Guidelines/cellulitis-guide.pdf>

Treatment should be started immediately familiar symptoms of cellulitis arise, but a medical opinion should also be sought as soon as possible.

If a recurrence occurs a change of therapy may be indicated in consultation with microbiologist.

A first attack of cellulitis following a human or animal bite or lick

Consider infection with *Pasteurella multocida*, *Eikenella corrodens* or *Capnocytophaga canimorsus*.

These organisms respond best to co-amoxiclav 625mg tds for 5 days, (if penicillin allergic, give doxycycline 200mg od and metronidazole 400mg tds for 5 days for animal bites or metronidazole 400mg tds and erythromycin 500mg qds for 5 days for human bites).

(Refer to Leicester, Leicestershire & Rutland Antimicrobial Policy and Guidance for Primary Care (2014), which has the course of these doses.)

These infections may be serious and require surgical exploration, particularly if presentation is delayed or the hand is involved. Any deterioration in condition, refer immediately to Infectious Diseases.

Avoid compression as it may push infection proximally, but affected limb should be elevated

Treat predisposing causes and ensure proper follow-up, including management of any subsequent lymphoedema (patient and GP to be supplied with suggested guidelines for future management following resolution of cellulitis.

Patients requiring pain relief should be prescribed an analgesic. Use paracetamol as a first choice of agent.

If an NSAID is necessary, use the lowest NSAID dosage compatible with symptom relief (ibuprofen is generally preferred) Gastric protection may also be required to minimize adverse GI events in someone at high risk for whom NSAID continuation is necessary. (Refer to <http://cks.nice.org.uk/analgesia-mild-to-moderate-pain>)

NB Past reports suggest that NSAIDs may increase the risk of streptococcal cellulitis developing into life-threatening necrotizing fasciitis.

Please note:

(i) that a 63-paper review concludes that prospective studies do not support suggestions that NSAID therapies play a causal role in increasing the risk of streptococcal necrotising fasciitis (Aronoff & Bloch, *Medicine* 82: 225-235, 2003), **but** (ii) that the same paper suggests that NSAIDs may alleviate symptoms of streptococcal necrotising fasciitis, resulting in a delay of appropriate diagnosis and treatment.

Primary Care Cellulitis Pathway

Guidance on Blood Sampling to inform IV antibiotic dosing

- It is the responsibility of the nurse to ensure that the blood sample for Renal Function is taken and obtain the result.
- It is a suggestion that the sample is taken on Day 1 or 2. If this at a weekend staff may wait till Monday and place in 'URGENT' bag at the GP surgery.
- The aim is to obtain the result prior to the Day 5 dose.
- If there is evidence of renal impairment then the nurse would need to get the authorisation sheet changed to reflect that on the 5th day the final IV / IM Teicoplanin dose must be omitted, or get the IV Flucloxacillin dose amended.
- The change on the authorisation sheet should be made by the prescriber or in exceptional circumstances a verbal message can be taken as long as it is backed up by a fax / text from a doctor / microbiologist.

References:

<http://cks.nice.org.uk/cellulitis-acute>

<http://www.gain-ni.org/images/Uploads/Guidelines/cellulitis-guide.pdf>

<http://cks.nice.org.uk/analgesia-mild-to-moderate-pain>

http://www.loros.co.uk/media/uploads/files/healthcare/antimicrobial_guidelines_on_the_lymphoedema_9_14.pdf

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Eron, LJ et al 2003. Managing skin and soft tissue infections: expert panel recommendations on key decision points. *Journal of Antimicrobial Chemotherapy* (2003) 52, *Suppl. S1*, i3–i17

HerchlineT et al. <http://emedicine.medscape.com/article/214222-overview>

Cellulitis - acute. <http://cks.nice.org.uk/cellulitis-acute>

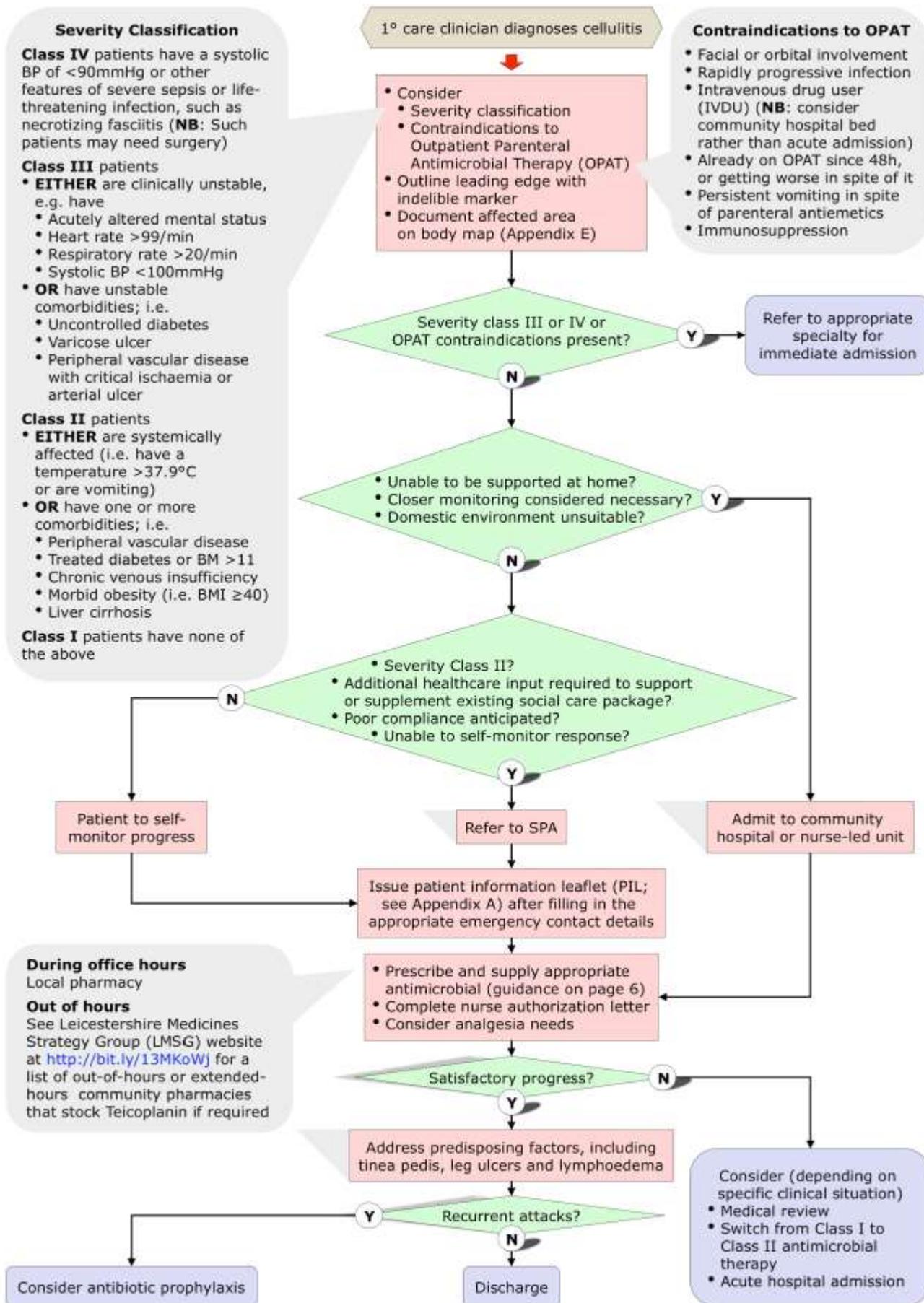
Guidelines on the Management of Cellulitis in Adults. CREST (Clinical Resource Efficiency Support Team, Northern Ireland) June 2005

<http://www.gain-ni.org/images/Uploads/Guidelines/cellulitis-guide.pdf>

British National Formulary (BNF) No. 68 (September 2014 – March 2015)

Leicester, Leicestershire & Rutland Antimicrobial Policy & Guidance for Primary Care (2014) <http://www.lmsg.nhs.uk/LMSGDocs/Guidelines/AntibioticGuidanceforPrimarycareDec2014.pdf>

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Primary Care Cellulitis Pathway

Patient Information Sheet – Cellulitis

Appendix A

You have been diagnosed with a condition called Cellulitis; this is an acute infection of the skin layers.

Instead of automatic admission to hospital you have been assessed as suitable to receive all or most of your medication and treatment at home from single point of Access (SPA).

You may need a 'one off' hospital assessment with discharge on the same day and you will then be sent home for the rest of your treatment.

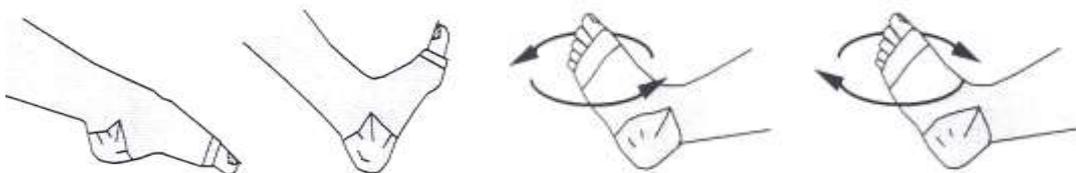
It is important that if there are any changes in your condition or you experience any of the following symptoms, you inform the single point of access (SPA) on 0300 300 1000 or your GP immediately.

- The redness and swelling spreads further.
- You start to feel feverish or more unwell
- Pain increases
- You feel warmer and your temperature is rising
- You become confused
- Your blood glucose levels become unstable (Diabetics only)
- Vomiting (as this is an indication for IV antibiotics or admission)

You can help aid your treatment by: -

- Finishing the course of any prescribed oral antibiotics, even though you may feel better and the redness is subsiding.
- If your cellulitis is on your **leg** you must sit and elevate it above hip level. If it affects your arm lift lower **arm** above level of elbow.
- If this is uncomfortable lie on a sofa or bed as much as possible to help the drainage and circulation in the limb.
- Although rest and elevation are essential, you must also mobilise your ankle joint and walk to the toilet.
- It is important that you take pain relief so that you are able to exercise your ankle and mobilise to the toilet.
- Important to drink plenty of clear fluids eg. Water, squash and tea.
- If you normally wear compression hosiery, seek GP advice on when to recommence (as compression hosiery should not be worn until infection is resolved)

Passive ankle exercises



Primary Care Cellulitis Pathway

Aftercare

Once the acute stage has passed and the inflammation is subsiding, it is important to care for the skin on your legs to prevent further problems: -

- Wash feet/legs daily in warm water using non-soap/non perfumed moisturiser e.g. formulary choice emollient
- Do not allow scabs or dry skin scales to form, these can allow bacteria to build up underneath un-noticed and are a potential source of further infection.
- As the cellulitis gets better the surface layer of skin will loosen and 'slough off', it is important to maintain skin hygiene and moisturise the skin regularly e.g. morning and evening to increase elasticity and suppleness and prevent cracking – another source of infection.
- Avoid direct exposure of your legs to sunlight or trauma.
- If you have been advised to wear compression hosiery, renew these every 3 months as they can lose their effectiveness over time. You will need to measure the largest part of your ankle and calf or your pharmacist can measure these for you so that the correct size hosiery is ordered.
- The moisturisers/emollients can reduce the lifetime of the elastic in your hosiery, therefore allow time for it to soak in or apply in the evening after removal of hosiery (a stockinette can be applied to protect your bed linen e.g. **Clinifast**)

GP NAME:.....PHONE NO:.....

SINGLE POINT OF ACCESS (SPA):

0300 300 1000

Primary Care Cellulitis Pathway

Appendix B

Cellulitis Chart

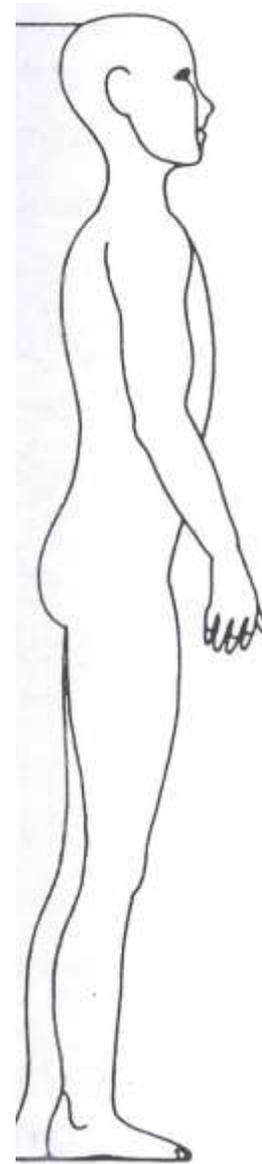
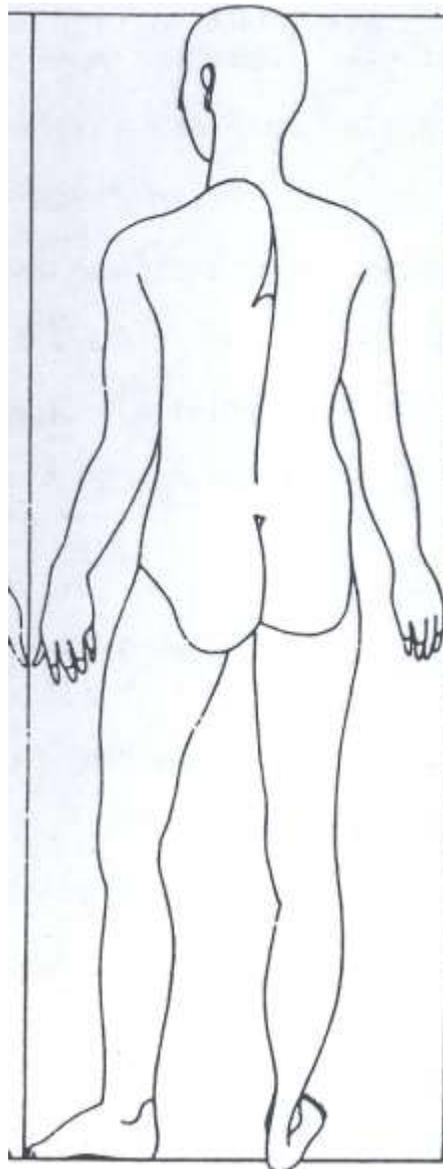
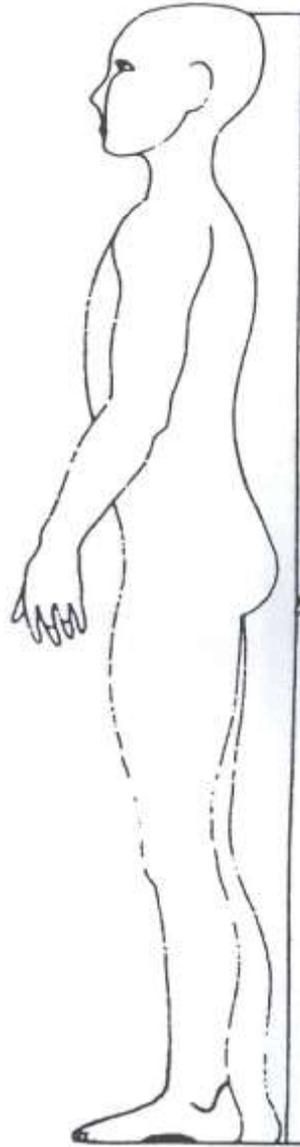
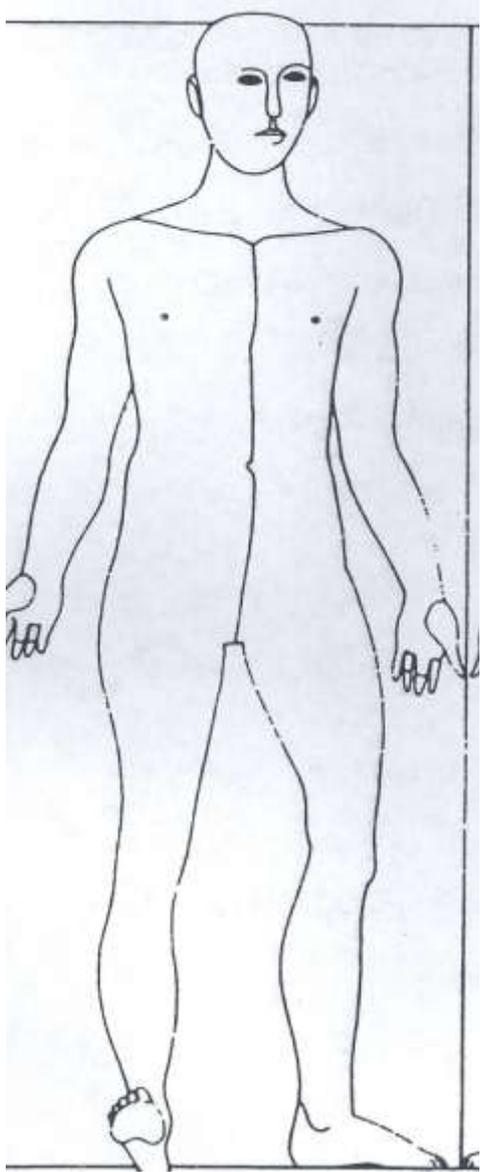
Name:-

Date of Birth:.....

Oral or IV medication:-

	Day 1 visit 1	Day 1 visit 2	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Date								
Visit No								
Temperature								
Blood Pressure								
Pulse								
Respiratory Rate								
BM								
Vomiting?								
Swab of area taken?								
Pain (ie, on movement, at rest)								
Hot to touch?								
Colour of cellulitis								
Spread outside of marked area or reduced in size								
Weight bearing?								
Signature								

Primary Care Cellulitis Pathway



Primary Care Cellulitis Pathway

Primary Care Nurse Authorisation

Appendix C


 Leicester City Clinical Commissioning Group
 West Leicestershire Clinical Commissioning Group
 East Leicestershire and Rutland Clinical Commissioning Group

University Hospitals of Leicester 
NHS Trust

Request for Continuation of IV Medication for the Treatment of Cellulitis in the Community

Emergency Decision Unit (EDU)
 Leicester Royal Infirmary
 Infirmary Square
 Leicester, LE1 5WW

Name of GP and Practice:

EDU desk 0116 258 6214
 ED office fax 0116 204 7935

Dear Community Nurse,

Re:

Patient details

Full name

DoB

Unit number

(use sticker if available)

NHS number

Address

This letter requests you to administer the following medication to the above named patient:
(EDU staff: Please complete the table below as applicable)

Drug name	Dose	Route	Frequency	Duration
Teicoplanin (reconstitute with 3mL of water)	<input type="checkbox"/> 400mg <input type="checkbox"/> 600mg <input type="checkbox"/> 800mg	IV	Has been given in UHL at (use 24h clock) :	N/A
Teicoplanin (reconstitute with 3mL of water)	<input type="checkbox"/> 400mg <input type="checkbox"/> 600mg <input type="checkbox"/> 800mg	IV	OD Has been given in UHL at (use 24h clock) :	<input type="checkbox"/> to be given 12h after initial dose <input type="checkbox"/> N/A
Teicoplanin (reconstitute with 3mL of water)	<input type="checkbox"/> 400mg <input type="checkbox"/> 600mg <input type="checkbox"/> 800mg	IV	OD	<input type="checkbox"/> 4 days (normal eGFR) <input type="checkbox"/> 3 days (reduced eGFR)

This is not a prescription – a copy of the prescription is attached

For further information refer to Cellulitis Pathway / Version 11 / Nov 2014.

Yours sincerely,

Signature
Role/job title
Print Name
Date

Primary Care Cellulitis Pathway

ED Cellulitis Pathway

Appendix D

Designed by MR Wise as part of the Leicestershire Adult Primary Care Cellulitis Pathway - v.11 - Nov 14

LRI Emergency Department

Cellulitis in adults

Intended to aid severity classification & management

Do not use for diabetic foot ulcer, osteomyelitis, decubitus ulcer, chronic stasis ulcer or dermatitis

In lymphoedema patients, use LOROS guidance instead

Version 29 - Jan 15

Disclaimer:
This is a clinical template; clinicians should always use judgment when managing individual patients

Patient details

Full name

DOB

Link number

(use sticker if available)

① Is patient morbidly obese?

Tick patient's height and enter their actual weight in the white box. Compare this with the calculated weight for a BMI of 40.

Body height		BMI 40	Actual weight
feet	cm	kg	kg
<input type="checkbox"/>	4'10	147	86.5
<input type="checkbox"/>	4'11	150	90.0
<input type="checkbox"/>	5'	152	92.4
<input type="checkbox"/>	5'1	155	96.1
<input type="checkbox"/>	5'2	158	99.8
<input type="checkbox"/>	5'3	160	102.4
<input type="checkbox"/>	5'4	163	106.3
<input type="checkbox"/>	5'5	165	108.8
<input type="checkbox"/>	5'6	168	112.9
<input type="checkbox"/>	5'7	170	115.6
<input type="checkbox"/>	5'8	173	119.8
<input type="checkbox"/>	5'9	175	122.4
<input type="checkbox"/>	5'10	178	126.8
<input type="checkbox"/>	5'11	180	129.5
<input type="checkbox"/>	6'	183	134.1
<input type="checkbox"/>	6'1	185	136.8
<input type="checkbox"/>	6'2	188	141.5
<input type="checkbox"/>	6'3	191	145.9
<input type="checkbox"/>	6'4	193	149.0
<input type="checkbox"/>	6'5	196	153.7
<input type="checkbox"/>	6'6	198	156.8

YES, as actual weight ≥ 'BMI 40 weight'

NO, as actual weight < 'BMI 40 weight'

Vital signs

Temp

°C

SpO₂

% in air

Resp rate

per min

Heart rate

per min

BP

mm Hg

MAP

mm Hg

- Obtain vital signs and finger prick glucose (BM)
- Record weight in box 1
- Assess pain and address any analgesia needs
- Take blood / obtain IV access if any of the below:
 - Aged > 64 years
 - Features of instability (see box 2)
 - IV antimicrobials mandatory (see box 3)
- Blood tests should include FBC, venous blood gas (VBG), U&E, LFT and coagulation screen
- Follow sepsis proforma in addition to this proforma if blood tests / IV access indicated
- Offer antipyretic / antiemetics as needed
- Outline leading edge on skin with indelible marker
- Document affected area on ED body map

Severe sepsis

Necrotizing fasciitis is a concern

Class IV

Class III

Class II

Class I

② Features of instability?

YES - at least one of the below

Acute physiology

Pulse > 99/min (after antipyretics)

Respiratory rate > 20/min

Systolic BP < 100mmHg

Acutely altered mental state

Comorbidity-related

Chronic stasis ulcer

Uncontrolled diabetes

Peripheral vascular disease with critical ischaemia or ulcer

NO - none of the above

③ IV antimicrobials mandatory?

YES - at least one of the below

Systemic features of infection

Temperature > 37.9°C

Vomiting

Relevant comorbidities

Morbid obesity (i.e. BMI ≥40; see box 1)

Treated diabetes

Glucose in ED > 11mmol/L

Liver cirrhosis

Evidence of peripheral vascular disease

Evidence of chronic venous insufficiency

NO - none of the above

④ Are OPAT * exclusions present?

YES - at least one of the below

Facial or orbital involvement

On OPAT since 48h, or worsening in spite of it

Rapidly progressive infection

Acute renal impairment (if U&E were indicated)

Immunosuppression

Unrelated medical reason to admit

NO - none of the above

* OPAT = Outpatient Parenteral Antimicrobial Therapy

Start antimicrobial as per box 6 on reverse **within 1h of arrival**

Admit to acute medicine unless

- Scrotal necrotizing fasciitis
- Urology
- Other necrotizing fasciitis
- Plastics
- Periorbital cellulitis
- Ophthalmology
- Other facial cellulitis
- Maxillofacial surgeons

Complete discharge bundle

- Prescribe TTO antimicrobials as per box 6 on reverse
- Consider TTO analgesia
- Hand out cellulitis PFI

Admit to EDU on 'cellulitis' pathway

This patient was managed by

Print name	Signature	Position	Date	Time completed
------------	-----------	----------	------	----------------

Primary Care Cellulitis Pathway

⑥ Antimicrobial therapy recommendations

mark the appropriate regimen by ticking the boxes

Important notes - read me first

- Seek microbiologist advice if cellulitis might be due to MRSA, or if patient is pregnant or breast-feeding
- If switching from Flucloxacillin to Teicoplanin there is no need to wait before first dose of Teicoplanin
- Antimicrobials may enhance the effect of Warfarin - increase INR monitoring during and after antimicrobial therapy

Severity class	Routine patients	Penicillin-allergic patients
I	PO Flucloxacillin 1G QDS 1 week <input type="checkbox"/>	PO Doxycycline 200 mg OD for 1 week <input type="checkbox"/>
II	<p>OPAT regimen (includes non-responders to class I therapy)</p> <p>eGFR normal <input type="checkbox"/></p> <ul style="list-style-type: none"> • Day 1 IV Teicoplanin dose* BD • Day 2-5 IV Teicoplanin dose* OD • Day 6-7 PO Flucloxacillin 1GQDS <p>eGFR 10 - 59mL/min <input type="checkbox"/></p> <ul style="list-style-type: none"> • Day 1 IV Teicoplanin dose* BD • Day 2-4 IV Teicoplanin dose* OD • Day 5 - no antimicrobial - • Day 6-7 PO Flucloxacillin 1GQDS <p>eGFR < 10mL/min – unsuitable for OPAT</p>	<p>eGFR normal <input type="checkbox"/></p> <ul style="list-style-type: none"> • Day 1 IV Teicoplanin dose* BD • Day 2-5 IV Teicoplanin dose* OD • Day 6-7 PO Doxycycline 200mg OD <p>eGFR 10 - 59mL/min <input type="checkbox"/></p> <ul style="list-style-type: none"> • Day 1 IV Teicoplanin dose* BD • Day 2-4 IV Teicoplanin dose* OD • Day 5 - no antimicrobial - • Day 6-7 PO Doxycycline 200mg OD <p>eGFR < 10mL/min – unsuitable for OPAT</p>
	<p>Community hospital regimen</p> <p>eGFR normal or > 9mL/min <input type="checkbox"/></p> <ul style="list-style-type: none"> • Day 1-5 IV Flucloxacillin 2G QDS • Day 6-7 PO Flucloxacillin 1G QDS <p>eGFR < 10mL/min <input type="checkbox"/></p> <ul style="list-style-type: none"> • Day 1-5 IV Flucloxacillin 1G QDS • Day 6-7 PO Flucloxacillin 1G QDS 	<p>eGFR normal <input type="checkbox"/></p> <ul style="list-style-type: none"> • Day 1 IV Teicoplanin dose* BD • Day 2-5 IV Teicoplanin dose* OD • Day 6-7 PO Doxycycline 200mg OD <p>eGFR 10 - 59mL/min <input type="checkbox"/></p> <ul style="list-style-type: none"> • Day 1 IV Teicoplanin dose* BD • Day 2-4 IV Teicoplanin dose* OD • Day 5 - no antimicrobial - • Day 6-7 PO Doxycycline 200mg OD <p>eGFR < 10mL/min – microbiologist advice</p>
	<p>* Teicoplanin dosing notes</p> <p>Patient weight < 70 kg <input type="checkbox"/> dose=400mg 70 -100kg <input type="checkbox"/> dose=600mg > 100kg <input type="checkbox"/> dose=800mg</p>	
	<p>III & IV</p> <p>eGFR normal <input type="checkbox"/></p> <p>IV Flucloxacillin 2G QDS for 1 week</p> <p>eGFR < 10mL/min <input type="checkbox"/></p> <p>IV Flucloxacillin 1G QDS for 1 week</p>	<p>eGFR normal AND < 65 years old <input type="checkbox"/></p> <p>IV Vancomycin 1G BD for 1 week</p> <p>eGFR normal BUT > 64 years old <input type="checkbox"/></p> <p>IV Vancomycin 1G OD for 1 week</p> <p>eGFR abnormal – see antimicrobial website</p>

⑧ Discharge vital signs

SpO₂ on air (%)

Resp Rate (/min)

Pulse Rate (/min)

BP (mm Hg)

Temp (°C)

⑨ Blood results

WBC

Hb

Platelets

INR

Na

K

Urea

Crea

eGFR

Glucose

Albumin

Bili

AP

ALT

Primary Care Cellulitis Pathway

Emergency Decision Unit Pathway

Appendix E

University Hospitals of Leicester 
NHS Trust

Emergency Decision Unit Pathway Cellulitis

Date

Has lived in UK >1 year?
 Yes No

Patient details

Full name

DoB

Unit number
(use sticker if available)

Inclusion criteria	<p>ED patients with cellulitis who require one or both of the below</p> <ul style="list-style-type: none"> For severity class II – up to two doses of IV antimicrobials and arrangement of community nurse OPAT (Outpatient Parenteral Antimicrobial Therapy) or IV treatment in community hospital For severity class I or II - MDT involvement to facilitate safe discharge
Exclusion criteria	<ul style="list-style-type: none"> Cellulitis of severity class III or IV Indication for hospital admission other than cellulitis Frail patient requiring geriatric attention

Notes to doctor completing this pathway (ED senior to ensure compliance)

- This pathway must only be used in conjunction with the 'Cellulitis in adults' ED management tool
- Ensure the tool has been fully completed
- Complete drug chart as appropriate, including drugs for effective pain and nausea control
- NB:** protocol violations are potentially dangerous to patients, yourself and the department. **Stick to the rules!**

EDU plan

Needs IV antimicrobials (NB: class II severity only)

- Give 1st dose as per ED management tool 'Cellulitis in adults'
- Keep patient overnight if 12-hour (2nd) dose is due out of hours **AND** SPA confirms that OPAT cannot be arranged for that time)
- NB:** Arrange for 3rd dose to be administered 12h after 2nd dose
- Arrange community hospital if one or more of the below
 - eGFR <10mL/min
 - IVDU
 - No fixed abode
- If none of the above:**
- Arrange community nurse OPAT (tick each task below when done)
 - Community nurse arranged via SPA on **0300 300 1000**
 - First visit has been agreed for _____:_____
 - TTO antimicrobials ordered
(**NB:** do not call pharmacist after 22:00 – wait until morning)
 - Analgesia needs considered (e.g. TTO or over-the-counter)
 - All three attachments of this pathway given to patient
 - Completed community nurse request letter (**NB:** attach a copy of the prescription)
 - Copy of completed ED body map
 - Cellulitis patient information leaflet
 - Copy of ED management tool 'Cellulitis in adults' (record blood results and vital signs before discharge)

AND

Needs attention from (if any)

Physiotherapist (for mobilisation)

Extension 5063
Bleep 4304

Occupational therapist (for assessment of ability to self-care)

Extension 5053
Bleep 4505

Primary care coordinator (assessment and arrangement of home care package or intermediate care)

Mobile 07814 253 447

Planned & agreed by	Referring doctor	Doctor in charge	(EDU) nurse in charge
Print names	_____	_____	_____
Signatures	_____	_____	_____

NB: A drug chart must be written before pathway can be signed off

Primary Care Cellulitis Pathway

Nursing Authorisation Form

Appendix F



Authorisation Sheet No.

AUTHORISATION FOR MEDICATION/TREATMENT

Requested by:.....Date.....

Patients Name:.....

Address:.....

D.o.B..... GP Name:.....

Please administer as per Cellulitis pathway:

Administer 5mls Sodium Chloride 0.9% pre and post administration of IV.
Administer slowly over 3-5 minutes
If Administering IV it may be reconstitute up to 10mls using normal saline 0.9% for injection but this is on the individual assessment.

Teicoplanin IV/IM following a tiered dosage regimen based on the weight of the patient as follows:

- Patients 70kg or below**
400mg IV/IM every 12 hours for three administrations (completes **Day 1-2**) followed by 400mg IV/IM every 24 hours for three administrations (completes **Day 3-5**).
- Patients over 70kg-100kg**
600mg IV/IM every 12 hours for three administrations (completes **Day 1-2**) followed by 600mg IV/IM every 24 hours for three administrations (completes **Day 3-5**).
- Patients over 100kg**
800mg IV/IM every 12 hours for three administrations (completes **Day 1-2**) followed by 800mg IV/IM every 24 hours for three administrations (completes **Day 3-5**)

All patients: Day 6 and 7 PO Flucloxacillin 1g qds OR if penicillin allergic PO Doxycycline 200 mg daily

NB. Liaise with Dr.....regarding U and E blood results to establish if renal function is normal.

Confirm U&E's Result:

Date:

IN RENAL IMPAIRMENT

eGFR >10ml/min <60ml/min

Dosing regimen same as for patients with normal renal function except OMIT FINAL DOSE.

Day 6 and 7 PO Flucloxacillin 1g qds daily

eGFR <10ml/min – admit to community hospital for IV flucloxacillin

Signature of Doctor/Nurse Independent Prescriber:.....

GP to prescribe sodium chloride 0.9% for 5ml IV flush pre and post administration