



Centre for Nursing Innovation  
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# The **Red Legs** Project and Cellulitis

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University Hospitals  
of North Midlands  
NHS Trust



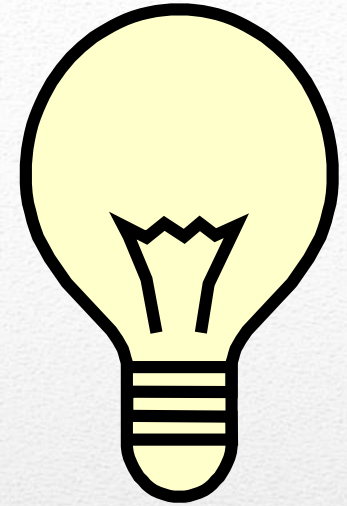




# Session will cover

- **Red Legs** innovative concept
- Development of the **Red Legs** Service
- Cellulitis in lymphoedema

# Innovative Concept



- Informal discussion between CNS Lymphoedema and consultant dermatologist highlighted the problem of “Red Legs”.
- An audit confirmed that patients with “Red Legs” on admission are often put on a standard cellulitis pathway without a process of differential diagnosis to establish the most likely cause (Levell, 2011).
- In many cases the symptoms of “Red Legs” can be attributed to gravitational eczema, dermatitis or other chronic conditions, which will not respond to Intravenous antibiotics (IV) and are dermatological in nature.
- This results in a number of patients, whose condition does not respond to the standardised treatment plan, leading to **duplication**, an extended length of stay and poor patient experience.



## Cellulitis:

- Bacterial infection of the skin and subcutaneous tissues
- Often streptococcus or staphylococcus aureus
- Acute, painful unilateral redness often of lower limb but can be anywhere on the body.
- May be warmth and tenderness with demarcation, skin blistering may occur
- Raised CRP and ESR
- May be a port of entry to the skin eg tinea pedis
- Strong link with lymphoedema

## Red Legs:

- Redness throughout both legs usually below the knee only.
- There can be associated warmth and tenderness
- No systemic upset or malaise.
- Generally as a result of chronic inflammatory changes e.g. dermatological and vascular which will not respond to antibiotic therapy

# Cellulitis v. Red Legs

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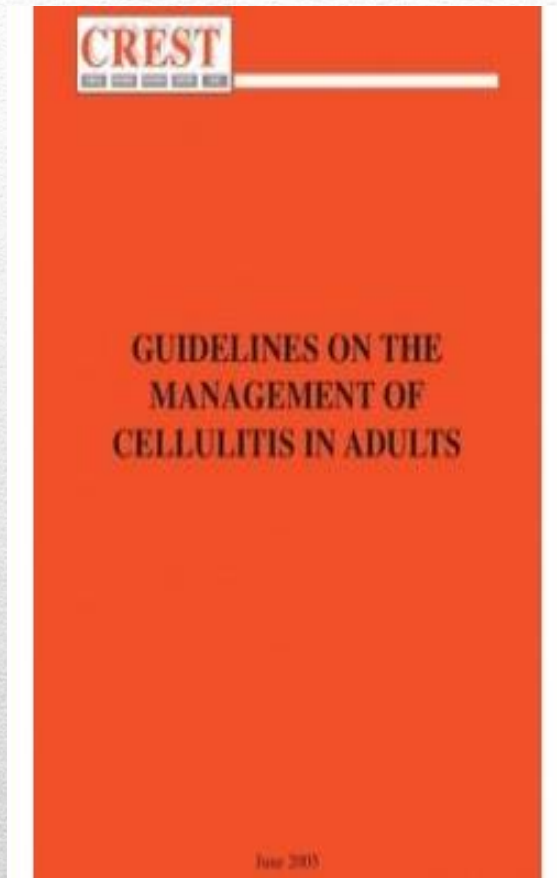


# Cellulitis



# Red Legs





The CREST guidelines 2005 clearly state that bilateral cellulitis is **extremely** rare and the document recognises the importance of differential diagnosis.

Check your trusts medical guidelines for diagnosing cellulitis.



# Cellulitis & Lymphoedema

- Cellulitis is both a **cause** and an **complication** of lymphoedema.
- Chicken and egg.
- Incidence of cellulitis is 46% in patients with lymphoedema

(Moffatt, C. et al, 2003)















In lymphoedema management the term Acute Inflammatory Episode (AIE) has been used to describe any infection in the skin or tissues e.g. cellulitis, lymphangitis, erysipelas or other.



# Cellulitis in lymphoedema

**BLS** BRITISH LYMPHOLOGY SOCIETY

**LSN**  
THE LYMPHOEDEMA SUPPORT NETWORK  
because lymphoedema matters

## Consensus Document on the Management of Cellulitis in Lymphoedema

Cellulitis is an acute spreading inflammation of the skin and subcutaneous tissues characterised by pain, warmth, swelling and erythema. Cellulitis is sometimes called erysipelas or lymphangitis. In lymphoedema, attacks are variable in presentation and may differ from classical cellulitis. Most episodes are believed to be caused by *Group A Streptococci* (Mortimer 2000, Cox 2009). However, microbiologists consider *Staph aureus* to be the cause in some patients (e.g. Chira and Miller, 2010).

Some episodes are accompanied by severe systemic upset, with high fever and rigors; others are milder, with minimal or no fever. Increased swelling of the affected area may occur. Inflammatory markers (CRP, ESR) may be raised. It is difficult to predict response to treatment. Cellulitis can be difficult to diagnose and to distinguish from other causes of inflammation particularly in the legs e.g. lipodermatosclerosis. Cellulitis most commonly affects one leg only whereas lipodermatosclerosis more commonly affects both legs.

A Cochrane review concluded that it was not possible to define the best treatment for cellulitis in general based upon existing evidence (Kilburn et al 2010). Furthermore, the treatment of cellulitis in lymphoedema may differ from conventional cellulitis.

With this background, this consensus document makes recommendations about the use of antibiotics for cellulitis in patients with lymphoedema, and advises when admission to hospital is indicated. Prompt treatment is essential to avoid further damage to the lymphatics of the affected part which in turn may predispose to repeated attacks.

- Very high correlation between lymphoedema and cellulitis due to reduced immune response and medium for growth
- Consensus document for the management of cellulitis in lymphoedema available free to download at [www.thebls.com](http://www.thebls.com).
- Can be atypical and fast. Compression?
- Has your trust got a patient information leaflet for cellulitis?

# Recurrent Cellulitis

- 2+ attacks of cellulitis annually
- 500mg Penicillin V daily then reduced to 250mg of amoxicillin after 1 year of successful prophylaxis. This dose is 75Kg or under, over 75Kg 1G daily
- If allergic to penicillin – 250mg of erythromycin or 250mg clarithromycin
- Should be continued for 2 years but if relapse occurs then prophylactic antibiotics maybe required lifelong
- Preventative advice **MUST** be given and treat any underlying skin conditions



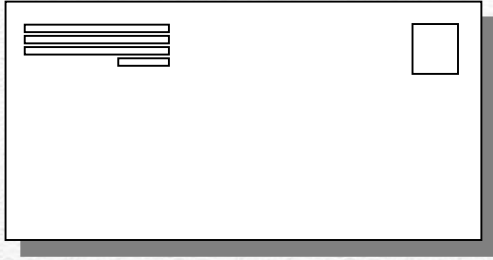
# Costs

- The NHS spends £172–254 million on the admission and treatment of patients with cellulitis.
- 400, 000 bed days
- England currently spends more than £178 million on admissions due to lymphoedema, with a rise in costs of £7 million from 2013 to 2014, equating to more than 22,904 additional admissions.
- For every £1 spent on lymphoedema management the NHS saves £100

# Cellulitis in lymphoedema

*Accelerate CIC reported that, of the 496 patients treated in the first year following introduction of a new community based Lymphoedema service for City & Hackney CCG, 30% had incidents of cellulitis in the year prior to treatment. They demonstrated a 94% decrease in cellulitis episodes for the same group following commencement of treatment, with an 87% reduction in cellulitis related hospital admissions*





Dear Rebecca ,

Many thanks for coming along on 12/9/19 .

X has sent me on your PowerPoint .It looks very interesting .

I feel we are probably over diagnosing cellulitis etc

Feedback from some of the doctors who attended shows that it was an excellent talk , and I gather it generated lots of discussion .

Best Wishes

X

Consultant Geriatrician

# Development of the **Red Legs** Service







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- Patient first project – successful application
- FONS support
- Burdett trust £3k bursary
- Trust board level sign up –  
Chief Nurse, finance dept.



University Hospitals  
of North Midlands  
NHS Trust

### **50 Sets of Notes Audited**

28 had true, unilateral cellulitis

12 had bilateral symptoms

10 episode of care missing

# **Background Costs**

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**15 sets of notes audited with  
recurrent symptoms**

7 unilateral cellulitis

8 bilateral symptoms

3 infected leg ulcers

3 lymphoedema



**Background Costs Cont. .**

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## Service Aims

1. Facilitate individual patient consultations utilising imaging and technology to support multidisciplinary input.
  2. Raise awareness among healthcare professionals of appropriate treatment for patients with red legs.
  3. Improve patient experience and quality of life for people with a diagnosis of red legs.
  4. Result in a fully funded, nurse-led, integrated service for patients with red legs.
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- The stakeholders were identified as:
- Those clinicians who would traditionally be responsible for treating patients with red legs, namely the specialities services of dermatology, tissue viability, podiatry, infectious diseases/microbiology and vascular departments.
- A and E (medics and nurses)
- Matron and directorate manager
- Patient representatives.

## **Engagement of stakeholders**

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- “This is very novel because the trust thinks it’s good at involving patients but this is the first meeting I’ve been to with consultants, management, specialist nurses and patient representation!”



# Inaugural Meeting

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*“The purpose of caring for patients with red legs is to provide an early and correct diagnosis, enabling their care pathway to be streamlined and provided by ONE integrated, multidisciplinary team.”*



# **Mission Statement**

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# Newsletter

- The newsletter was kept to one side of A4 paper to ensure it would be focused, was not too onerous and by distributing by email costs were kept to a minimum.

“easy to read”

“reminds me what I should be doing”

“many thanks”



The image shows a screenshot of the IRLS Newsletter for March 2012. The newsletter is titled "IRLS Newsletter" and "March 2012". It is divided into several sections: "Developments to date", "Dates of Importance", and "2nd Stakeholder Meeting 28.3.12". The "Developments to date" section includes three items: 1.3.12 Beccy and Claire attended FONS workshop number 3, which included updates from each of the project groups and the importance of continued evaluation; 6.3.12 Beccy and Claire attended a commissioning seminar at Keele University which included presentations by members of the DH and highlighted the importance of user involvement in developing any new services. It also consolidated learning from the FONS workshops around the concepts of participation; March 2012 We have met with the transformation team and are currently looking at establishing referral pathways to IRLS from the emergency portals; March 2012 A literature search to form the basis of the commissioning paper has been completed; 16.3.12 Abstract submitted to an International conference. The "Dates of Importance" section includes 24.4.2012 Conference call with FONS and 3.5.2012 FONS workshop 4/5 in London. The "2nd Stakeholder Meeting 28.3.12" section describes the meeting, noting excellent attendance and enthusiasm from key stakeholders, and mentions Dr. Hakim who is carrying out an audit at UHNS of cellulitis. The newsletter also includes contact information for Rebecca Elwell/Claire Sharp at the Lymphoedema Clinic, UHNS, and a photo of two women.

**IRLS Newsletter**

March 2012

**Developments to date**

1.3.12 Beccy and Claire attended FONS workshop number 3, which included: updates from each of the project groups and the importance of continued evaluation.

6.3.12 Beccy and Claire attended a commissioning seminar at Keele University which included presentations by members of the DH and highlighted the importance of user involvement in developing any new services. It also consolidated learning from the FONS workshops around the concepts of participation.

March 2012 We have met with the transformation team and are currently looking at establishing referral pathways to IRLS from the emergency portals.

March 2012 A literature search to form the basis of the commissioning paper has been completed.

16.3.12 Abstract submitted to an International conference.

**Dates of Importance**

24.4.2012 Conference call with FONS 3.5.2012 FONS workshop 4/5 in London

**2nd Stakeholder Meeting 28.3.12**

Once again there was excellent attendance and enthusiasm from all the key stakeholders. A participation exercise was used to clarify the direction of the project and address any issues or concerns held by the members. Dr. Hakim was welcomed who is carrying out an audit at UHNS of cellulitis. The next steps will be to establish robust screening tools to identify cellulitis, which will involve meeting with certain stakeholders individually and a visit to the Norfolk project.

**Contact us:**  
Rebecca Elwell/Claire Sharp  
Lymphoedema Clinic  
UHNS  
Email: Rebecca.elwell@uhns.nhs.uk  
Phone: 01782 553072

The project mission statement is: the purpose of caring for patients with red legs is to provide an early and correct diagnosis, enabling their care pathway to be streamlined and provided by ONE integrated, multidisciplinary team.



# Communication



- Comments received from the support group included:
- *“Wish the service had been in place when I was sent to A and E!”*
- *“Really good to be a part of something developing”.*

# **Patient Support Group**

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- Multidimensional –formal, informal, quiz
- Lymphoedema practitioner learning took place
- Education with key referral sites e.g. A and E nursing and medical staff
- Change in Trust medical guidelines to reflect CREST (2005)
- Patient information leaflet
- Promotion “Red Legs”



# Education and Promotion

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# Referral criteria

Referral form developed with emergency medicine using CREST guidelines.

Aim was to reduce admission of patients with suspected Cellulitis who would not respond to antibiotics.

Benefits of this would be reduced admissions, reduced episodes of inpatient care, reduced length of stay, reduced misdiagnosis, reduced antibiotic (especially intravenous) therapy, reduced risk of hospital acquired infection but most importantly improve patient experience.

Inclusion criteria: Bilateral red legs, apyrexial, not systemically unwell, able to attend out patient appointment (with transport)

Exclusion criteria: Unilateral red leg (unless DVT excluded), acute cellulitis

The screenshot shows a Microsoft Excel spreadsheet titled "INTERNAL Referral Form June 2013.xlsx". The spreadsheet contains a "Red Leg Service Referral Form" for the University Hospitals of North Midlands (NHS). The form is divided into several sections: Patient Details, GP details, Medical History, Current Medication, Investigations, Allergies, Current Treatments, and Referral Details. The form includes fields for Name, Date of Birth, Hospital/NHS no., Address, Post Code, Tel No., Next of Kin name and contact number, Date of onset, Site, Investigations, Allergies, Current Treatments, Name of referrer (Print), Signature of Referrer, Contact Tel no., Date of referral, Date received, and Date of next appointment. The form also includes a footer with contact information for the Red Leg Service, Lymphoedema Clinic, Trust Building, City General Hospital S74 10GS.

- A new challenge!!
- Different priorities, clinical and managerial.
- Project leader responsibilities: background, clinical information and patient related outcome measures
- Manager: costings, financial implications and strategic arguments.
- Local commissioner

# **Develop A Commissioning Paper**

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- The **Red Legs** service was successfully commissioned in full and was commended for its innovation – Pioneer of nursing award.
- High levels of patient satisfaction during pilot.
- “One stop shop” approach, with use of photography to enable other disciplines to be involved in the patients care reducing out patient appointments required.
- The project was very much in line with new CCG guidance (2013) with the patient at the centre of any service development and this was easily demonstrated.

# Develop A Commissioning Paper

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- Identify secondment opportunity and JD, Person spec development for A and E and interview
- Recruitment to Band 4 and Band 2 admin
- Identify clinic space and appropriate waiting space along with equipment and resources e.g. height adjustable couch, washing facilities
- Appointment scheduling and documentation including referral form, assessment form, patient satisfaction questionnaire, patient information leaflet
- Identification of atypical patient on referral process

# **Implementation and operational set up**



- The service opened earlier than anticipated due to it meeting the requirements of the acute trusts unscheduled care improvement plan (UCIP).
- The aim of UCIP was to ensure the throughput at the hospital enabled the A and E targets to be met
- RLS project fitted the UCIP programme by addressing inappropriate admissions and reducing length of stay.
- As the project had initial sign up from the director of nursing it was on the radar and this support enabled the early start date and undoubtedly contributed to the successful set up. This did put added pressure on the project team to ensure that the launch would go smoothly.

# Implementation

- It was agreed that data would be kept on the number of referrals received e.g. appropriateness, source etc.
- An excel spreadsheet was developed along with a patient satisfaction questionnaire
- This questionnaire would collect information about the patients experiences of the **Red Leg** service but also their previous experiences
- Results would be used as evidence for the continuation of the **Red Legs** service.

# Evaluation



- Causes of **red legs** have been found to be largely dermatological in nature
- As we are not dermatology specialists algorithms have been developed for common skin conditions eg tinea pedis and dermatitis and do work
- Locally agreed, formulary friendly emollient and steroid ladders can help make selection easier when managing skin conditions.

# Results

- Multidisciplinary style discussion.
- WABA
- Inter departmental referrals have been commissioned reduce wait time and duplication.
- Management should still be instigated and then referral made as the symptoms may improve
- Expedite conditions which are suspicious e.g. BCC

# **Atypical patients**



Chronic  
oedema

Just because  
you know don't  
assume others  
do

Reduce  
duplication

Be a red  
leg  
ambassador

Improve  
efficiency

Refer  
on



**PREVENTION  
IS BETTER  
THAN  
CURE**

# UHNM Red Leg Service

- Still only one in the UK
- To date we have seen over 2000 patients, originally commissioned for 148 per year approx.
- Once a week 30 minute opa.
- Thought referrals would stop!
- Highly evaluated by patients.
- If no oedema 90% d/c same day.
- Identification of serious conditions in some e.g. heart failure, DVT, BCC



# How to set up a **Red Leg** service in your area.

- Identify your champions at high level
  - Identify your stakeholders
  - Get to know a commissioner
  - Service specification
  - NLP/BLS commissioning & tariff document
  - Links e.g. antimicrobial stewardship/ medicines optimisation
  - Apply for project support locally or nationally
- Identify secondment opportunity and JD, Person specification development or permanent position if possible.
  - Identify clinic space and appropriate waiting space along with equipment and resources e.g. height adjustable couch, washing facilities
  - Appointment scheduling and documentation including referral form, assessment form, patient satisfaction questionnaire, patient information leaflet
  - Identification of atypical patient assessment and onwards referral process

- The project has a broad and multi-agency scope which has involved a significant amount of coordination. Developments have been measured constantly and evaluated with a project newsletter as the main way of communicating. There has been a commitment to utilising a number of facilitation techniques and practice development methods in the progression of the project with the patient always at the centre.
- An integrated “red leg” service is an innovative approach to caring for people with red legs, not only treating the acute phase of care but with the use of education at the initial assessment providing the user with preventative strategies for future care.

# Conclusion

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A **red leg** service, staffed with a skill mix is a cost effective way of managing patients with red legs, with potential savings in GP/ANP appointments, antibiotic usage both IV and oral, antibiotic related issues requiring further investigation/prescription e.g. Clostridium difficile, thrush, hospital visits e.g. A and E for suspected cellulitis/ to exclude DVT, hospital admissions for suspected cellulitis to name but a few. More importantly, for patients who have suffered for years a **red leg** service can result in a timely and correct diagnosis and appropriate treatment and management.

# Conclusion cont..



# Thank you





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# References

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