GIG CYMRU NHS WALES

THE CHRONIC OEDEMA WET LEG PATHWAY©

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Lymffoedema Cymru
Lymphoedema Wales

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1. Aim and Purpose of the Pathway

The aim of this pathway is to support effective management of patients affected with chronic oedema and lymphorrhoea (wet legs) thereby reducing complications. The decision pathway provides clear evidenced-based literature to registered nurses and health care support workers to deliver timely and prudent care for people with chronic oedema and lymphorrhoea.

Following the pathway can reduce patients' distress, improve quality of life and enhance wound care effectiveness. It will also decrease the likelihood of hospital admissions from cellulitis, decreasing the burden on unscheduled care to the NHS. This pathway will complement efficient caseload management by increasing nurses' confidence in applying compression bandages instigating a reduction in patient visits and the time spent on each session.

Furthermore, once the pathway has been embedded and the patients' chronic oedema and lymphorrhoea is improved, appropriate compression garments can be applied which will help maintain skin integrity, limb size and reduce the risk of recurrent leg ulceration/ lymphorrhoea. The use of appropriate compression garments will avoid the vicious cycle of 'skin break-down and near-healing' which can very often be witnessed with chronic oedema.

It is vitally important to understand that the pathway is not a sequential process and patients can be introduced to any level based on assessment and desired outcome. Even more important, if, after 3 applications of a selected level there is no improvement - or if the patient's condition deteriorates - re-assessment is essential. For example if a patient is in Level Two Support and has not improved after 3 sessions then Level Three with more compression should be recommended. This pathway can be used in the community, wound clinics or leg clubs, nursing home settings as well as hospital wards.

2. Introduction

Chronic oedema and lymphoedema are basically the same condition as it is the failure or overload of the lymphatic system that causes the oedema. Some clinicians suggest that chronic oedema is the umbrella term of all oedema[1]. It is important to recognise that even acute oedema can be attributed to failure or overload of the lymphatic system. Acute oedema needs investigation to determine the cause. However, to reduce the risk of complications such as wounds and cellulitis, prompt treatment is recommended.

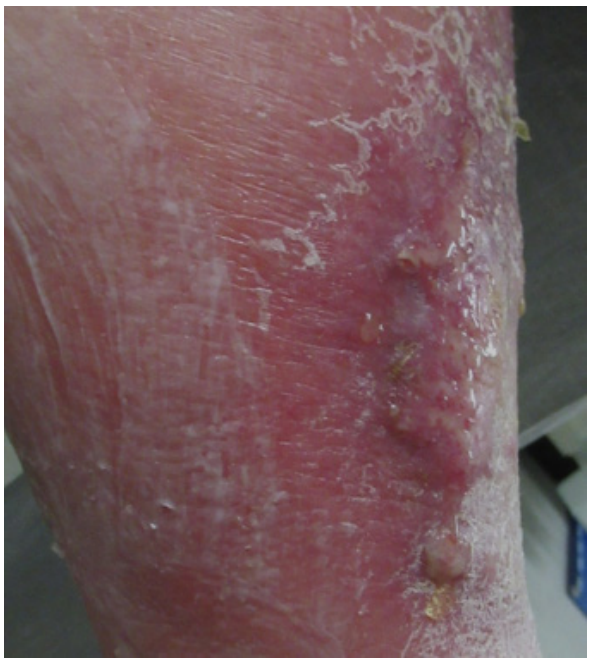
For the purpose of this document oedema will be termed chronic oedema.

2.1 Definitions

Chronic oedema is a term that encompasses numerous causes of oedema development where swelling is present for three months or more[2]. Oedema can occur in any part of the body but is more frequently seen in the lower limbs due to dependency and gravity.

Lymphorrhoea is defined as leaking lymphatic fluid (lymph) though the skin surface. Lymphorrhoea looks like beads of fluid which leak from the affected oedematous area, increasing the risk of cellulitis and skin damage[3]. Lymphorrhoea in the legs is commonly referred to as wet legs as shown in the following photos.

Lymphorrhoea and Chronic Oedema in the Lower Legs



2.2 Review of Chronic Oedema and Lymphorrhoea Evidence

Chronic oedema can affect any age group but is more frequently seen in the elderly. Evidence suggests that the crude prevalence could be 3.93 per 1,000 population rising to 28.75 per 1,000 in those aged over 85 years[4]. In Wales in 2019, the prevalence of chronic oedema in all age groups was reported to be 6.4 per 1,000[5].

With a rising elderly population, obesity, cardiac failure, cancer and three quarters of the population not getting enough exercise, the cases of chronic oedema are increasing at an expediential rate[6]. As a consequence, those with chronic oedema can experience repeated cellulitis episodes, accounting for 2-3% of all hospital admissions[7-9]. In a 2019 UK community nursing study, 57% of the caseload had chronic oedema and were statistically more prevalent to have wounds, reduced mobility, obesity and 25% had experienced cellulitis[10]. Correspondingly in a Welsh study in 2018, the community caseload with chronic oedema and wounds in one Health Board was 59%[11-12].

Research completed in 2021 also suggested that 40% of community nursing time is spent treating people with chronic leg ulcers[13]. This correlates with pinnacle research conducted in Derby of a sample of 32 patients with chronic oedema showed 50% had leg ulceration with 31% having an ulcer for more than 5 years[14]. Secondary complications included: 53% suffered a cellulitis which 9% required hospital admission with 11 days being the average length of hospital stay. Importantly, lymphorrhoea can be a consequence of untreated chronic oedema and a complication of leg ulceration. Without the implementation of compression bandaging there is very little hope of controlling and treating lymphorrhoea. Lastly, research investigating chronic oedema in Care Homes in one area in Wales identified 27% (262/960) of residents with the condition. Surprisingly, 40 residents reported falls and of those 70% (28) had chronic oedema. Further, 31 residents reported recurrent cellulitis and 81% (25) had chronic oedema[15].

Subsequently, chronic oedema is widely seen across all health care settings and does incur significant costs to the NHS. The cost of managing lower limbs wounds with many certainly having chronic oedema is estimated to be excess of £5 billion per annum[16]. Thus, it is vital that we implement appropriate chronic oedema management to reduce escalating costs.

Moreover, lymphorrhoea and chronic oedema affect individuals, carer and families physically, psychologically and socially. It impacts on their quality of life and the ability to undertake normal activities of daily living [2,17-21].

Chronic oedema includes;

- Increasing social isolation and loneliness, embarrassment and reliance on health care contacts;
- The inability to safely mobilise or use stairs with a tendency to sleep in a chair rather than a bed;
- Unable to wear normal shoes or slippers, increasing the risk of falls and a limited choice of clothes which has an adverse affect on body image and again increases social isolation;
- Increased pain and limb heaviness which could exacerbate concurrent conditions such as arthritis;
- Anxiety, fear, depression, embarrassment and loss of control;
- Poor wound healing;
- Increase risk of developing cellulitis which results in hospital admissions;
- Lymphoedema patients report that the condition affects their ability to work and many give up work as a result.

To ensure effective management it is important that healthcare professionals identify the contributing aetiology causing the chronic oedema through a holistic assessment[22]. The assessment may identify cautions or possible contradictions to the higher compression levels of the pathway in patients diagnosed with severe peripheral arterial disease, uncontrolled heart failure or end stage kidney disease[23].

It is important to note that Level One of the pathway (Support/ Comfort) can be used safely with all patients regardless of aetiology to reduce the risk of other complications. Providing Level One of the pathway does not usually stop the copious leaking as it does not provide compression but using stockinette and wool/undercast padding can prevent strike through and reduces the level of symptoms that patients encounter.

In order to provide specialist knowledge and to complement existing holistic assessments, the Chronic Oedema Wet Leg Pathway© was developed and is being used locally, nationally and internationally[11-12, 24-26].

3. The Chronic Oedema Wet Leg Pathway©

The Chronic Oedema Wet Leg Pathway© was developed in 2017 as part of the On the Ground Clinical Educators Programme (OGEP)[24]. During this programme, it became apparent that many patients with chronic oedema and lymphorrhoea were being routinely managed ineffectively by the application of a wound dressing and just a yellow/blue stockinette liner which actually provided no compression or support. Unsurprisingly with no active compression patients were being seen at least once a day as the lymph fluid had soaked through the dressing and stockinette. Sadly, within the literature there were no guidelines or evidenced based pathways to support the application of prompt compression before performing an arterial assessment including an Ankle Brachial Pressure Index (ABPI) as detailed in section 3.5. Ironically, having chronic oedema affects the accuracy of the ABPI results therefore negating its use in practice for those patients. Yet delaying treatment for patients with chronic oedema and lymphorrhoea causes many unnecessary complications and doing nothing causes more harm. Thus, the Chronic Oedema Wet Leg Pathway© was created to support the efficient, effective and prompt management of patients affected with chronic oedema and lymphorrhoea, reducing the risks of further complications associated with the delayed application of compression such as cellulitis, hard to heal wounds and falls.

One of the main benefits in the first two levels of the Chronic Oedema Wet Leg Pathway© is introducing support and then reduced compression without the need for an ABPI.

3.1 The Chronic Oedema Wet Leg Pathway© Levels

The Chronic Oedema Wet Leg Pathway© has four levels of support/compression.

Level One: does not provide any compression only support but can prevent strikethrough. Using Level One ensures that dressings stay in place and that the skin is protected. This level is particularly useful in the short term, during the acute phase of cellulitis, where skin integrity is compromised in end of life situations and can be utilised by all staff bands post training. Level One provides less than a Class 1 compression and an ABPI/TBPI (Toe Brachial Pressure Index) is not required [27-30]. However, it may not promptly stop lymphorrhoea as there is no compression.

Level One uses a wound dressing, stockinette liner, undercast padding (at least 3 rolls to reshape and protect the limb) then another stockinette liner over the top - in essence a wool sandwich! The use of padding over the dressing and stockinette liner protects the fragile skin and anatomical structures as well as supplementing the absorbency of lymphorrhoea.

Level Two: provides less than class one compression (14-17mmhg) and an ABPI/TBPI is not required[27-30]. Level Two provides a therapeutic level of compression to treat lymphorrhoea as it also promotes patient compliance with tolerable compression in a staged approach. Level Two uses a wound dressing, stockinette liner, undercast padding (at least 3 rolls to reshape and protect). Apply short stretch inelastic bandage (10cm width) in a spiral application from the base of the toes up the leg with a 50% overlap and ending just below the knee. An 8cm width bandage can be used over the foot if necessary, followed by a 10cm from the ankle.

Level One and Level Two reduces the need for daily bandaging changes. They provide patients with comfort at a therapeutic level, whilst encouraging patient concordance/ tolerance prior to applying optimum compression[2, 4].

Level Three: applies a higher class compression, utilising two layers of short stretch inelastic bandaging. Initial application of this level may require collaboration with and support from the local lymphoedema service to increase professional knowledge and competency of the health care professional (HCP). However, once competencies and confidence are achieved HCPs can apply independently. An arterial assessment is required which may or may not necessitate an ABPI or TBPI.

Level Three uses a wound dressing, stockinette liner, undercast padding (at least 3 rolls to reshape and protect) then apply short stretch inelastic bandage (10cm width) in a spiral application from the base of the toes up the leg with a 50% overlap & full stretch up to the knee. Apply the second layer of short stretch inelastic bandage (10cm width) at full stretch in an opposite spiral application from the base of the toes up the leg with a 50% overlap ending just below the knee. (An 8cm width bandage can be used on the foot.)

Level Four: Applies more compression than Level Three by applying more layers of short stretch inelastic bandage. Some patients' chronic oedema and lymphorrhoea will not improve in Level Three as they may, for example have venous incompetence, obesity or a wound that is not healing. Adding more layers increases the compression and firmness. Application of Level Four should be in collaboration with the local lymphoedema service which can advise on application. The local lymphoedema service can teach methods of bandaging to increase HCP's knowledge and support competency. An arterial assessment is required which may or may not necessitate an ABPI or TBPI.

Level Four uses a wound dressing, stockinette liner, undercast padding (at least 3 rolls to reshape and protect) then apply short stretch inelastic bandage (8cm/10cm width) in a spiral application from the base of the toes up the leg with a 50% overlap & full stretch ending just below the knee. Apply the second/ third / fourth layer of Short Stretch Inelastic Bandage (10cm width) at full stretch in the opposite spiral application from the base of the toes up the leg with a 50% overlap ending just below the knee.

3.2 Applying the Chronic Oedema Wet Leg Pathway©

It is important to understand, the pathway is not a sequential process and patients can be introduced to any level based on patient assessment and desired outcome. It is vitally important that if, after 3 applications of a selected level, there is no improvement or if the patient's condition deteriorates, re-assessment is essential.

If a patient's lymphorrhoea has ceased it is equally important to move the patient off the Chronic Oedema Wet Leg Pathway© and assess, measure and issue compression garments as ongoing management of their lymphoedema. Please see section 4.

Of note:

- All oedemotous legs must include a skin and a wound assessment (if relevant) and follow local assessment documentation. Arterial assessment is dicussed in 3.5.
- The Chronic Oedema Wet Leg Pathway© (Appendix1) and Chronic Oedema Wet Leg Pathway© (Appendix 2) can be photocopied and placed in patient records when being utilised.
- We would recommend that all existing local wound care pathways or wet eczema guidance are followed.
- There is also a British Lymphology Society (BLS) Red Leg Pathway© which is available at: https://www.thebls.com/documents-library/red-legs-pathway-notes

3.3 Application of Toe Bandaging

If toes are oedematous then compression should be applied regardless of which Level of the Chronic Oedema Wet Leg Pathway© is being used. Toe bandaging can also be used to reduce the risk of oedema entering the toes if the foot is bandaged.

Apply 4cm bandage such as Hospiform, K band or Mollelast and anchor with a loose turn around the base of the forefoot. This bandage may be folded in half for ease of application (see Appendix 3). Take the bandage across the dorsum of the foot up to the big toe, wrap around the base of the toe nail – use light tension only. Whilst applying the bandage to each toe – ensure all skin is covered and up to the base of the toe nail. There is no need to bandage the little toe as it rarely swells due to its anatomical position.

If HCPs are not competent in the application of toe bandaging a compression toe cap can be used. If toe oedema is not managed it can put the patient at significant risk of further complications such as lymphorrhoea, wounds and cellulitis. See Appendix 3 for more practical information on how to bandage the toes.

Stump bandaging can also be used regardless which Level of the Chronic Oedema Wet Leg Pathway© is being used. A stump bandage (moccasin type) encompasses all the toes and foot. Contact your local lymphoedema service who can provide you with additional training.

The Chronic Oedema Wet Leg Pathway© and some information on toe bandaging can be viewed via the training video link and QR code below:

www.medic.video.wetleg

3.4 Application of Knee and Thigh Bandaging for Oedema Management

Often the extent of the chronic oedema will not remain in the lower leg but extend towards the knee and thigh. Knee oedema can cause difficulty in walking and increased pain. Therefore, if a patient does have oedema in the knee or thigh then compression must be extended to incorporate those areas. The local lymphoedema service will be able to teach you how to manage knee/thigh oedema. If applying above knee bandaging, remember to make sure you have padded well behind the knee to avoid discomfort. For some patients the application of a class one thigh garment can also be utilised with the foot and calf region cut away.

3.5 Arterial Assessment

National guidance recommends that prior to applying compression with patients who present with leg ulceration the arterial/vascular status is assessed as part of a holistic assessment. Based on patients' past medical history, presenting symptoms an ABPI record may be considered necessary[31-32.] It is important to note that determining an accurate arterial status of patient with chronic oedema will have limitations. To date no such guidance exists when leg ulceration co-exists with a chronic oedema diagnosis. ABPI accuracy can be compromised if skin thickening, hyperkeratosis and the presence of oedema exist, coupled with the ability of the patient to tolerate the required procedure [27,33-35.] In these circumstances HCPs need to rely on detailed history and clinical examination. If in any doubt on the vascular status of a patient, a vascular opinion should be sought.

If there is a risk of arterial disease based on the list of risk factors (below) then a TBPI should be performed. For patients having Level One and Level Two an ABPI/ TBPI is not required [34-35] because these levels are based on the minimal amount of compressive forces that are exhibited in the support system. Lymphoedema Wales Clinical Network (LWCN) and the Surgical Material Testing Laboratory (SMTL) have tested the systems and Level One produced less that 10mmhg of compression whereas Level Two provided less than class one compression (14-17mmhg). Recent guidance [27, 28] states that class 1 compression (14-17mmhg) is considered safe to use without an ABPI provided there is no history of arterial disease or arterial symptoms.

Risk Factors for Arterial Disease

Systemic indicators of arterial disease	Changes to the limb
History of ischemic heart disease	Pale colourless limb
History of stroke	Limb feels cold to the touch
Transient ischaemic attacks	Diminished or absent foot pulses
History of rest pain	Loss of colour on elevation
History of arterial surgery	Delayed capillary refill
History of intermittent claudication	

Seminal research by Partsch and Mortimer[36] also highlighted that compression can increase arterial blood flow even in patients with arterial inclusive disease. This is based on the fact that when the surrounding oedema is reduced the arterial flow increases. Intermittent compression which is evident in the short stretch bandaging systems increases venous output and arterial perfusion[36, 37].

4. Compression Garment Guidance

As soon as the patient's chronic oedema and lymphorrhoea has improved, appropriate compression garments must be applied which will help maintain skin integrity, limb size and reduce the risk of recurrent leg ulceration/lymphorrhoea. The use of appropriate compression garments will avoid the vicious cycle of 'skin break-down and near-healing' which can very often occur with chronic oedema. There are a variety of compression garments available but it is important to realise that the same type of product does not suit everybody. Garments can be flat or circular knitted, ready to wear or made to measure and come in several fabrics, colours and styles. What is vital is supporting patients to apply garments correctly and provide compression applicators if appropriate. The provision of compression garments is a key cornerstone of chronic oedema management along with skin care, exercise/movement and weight management. Collaboration with the local lymphoedema service is recommended for the patients' long term management and concordance to compression.

A comprehensive Garment Guidance based on LWCN formulary is included as Appendix 4. This document provides information on the types of garments and other options that are available.

Appendix 5 provides guidance on the ready to wear compression garments that are available.

Appendix 4 and 5 can be printed for ease of use.

To support positive lifestyle choices and effective self-management, patient information leaflets and video films have been developed by LWCN. Contact your local lymphoedema service for more information.

5. Exercise, Movement and Mobility

Gentle movement, exercise and activities will help the muscles pump lymph fluid throughout the body. Exercises can help people improve and maintain flexibility and keep the bones strong. Being more active also supports maintaining a healthy weight. All patients following the Chronic Oedema Wet Leg Pathway© should be given a range of exercises as shown in Appendix 6 to perform daily. These range of exercises can be taught by any HCP as they are basic range of movement activities which will enhance compression. If any patients are at risk of falls then referral to physiotherapy or a falls service is important.

If a patient is being bandaged it is important to assess what shoes they can safely wear to reduce the risk of falls. Bandaging shoes like Cellona Shoe or Darco shoes are available - these can be purchased or the patient can be provided with a prescription, as they are available on drug tariff. Please contact your local lymphoedema service for more information.

6. Skincare

Skincare is a vital component of chronic oedema management. Patients should be encouraged to regularly wash, dry and moisturise their skin with a suitable emollient. Areas between toes and skin folds should be checked and dried thoroughly to reduce the risk of intetrigo that leads to fungal infection and potential cellulitis.

7. Delegation

Implementing a greater skill mix within teams and delegating some tasks to HCPs has the potential to free up more senior staff to deliver care for patients with advanced needs. LWCN can deliver an Agored Cymru Accredited Unit, on Managing Chronic Oedema with Wet Legs which would support the role of safe delegation from a registered HCP to an unregistered HCP. Please contact us for details on how to attend our courses. Our details are on the back page.

On completion of a holistic assessment, a registered HCP can delegate a specific task with ongoing supervision to a competent healthcare support worker[38].

This change of practice will be supported through competency based informal and formal education, ensuring increased skills in the application of Level Two and Level Three bandaging. On-going support must be provided by the delegating registered HCP. Marginal gains can be realised through the delegation of tasks from a registered HCP to an unregistered HCP. Delegation of tasks has the potential to improve patient experience and outcomes and demonstrates value-based healthcare.

8. Conclusion

This pathway includes evidenced based research which justifies the prompt use of compression in the treatment of lymphorrhoea ‘wet legs’ and chronic oedema. Incorporating evidence-based pathways into the clinical practice of all HCPs is vital in improving patient outcomes. This pathway standardises effective and efficient management plans for patients, reduces the need for community visits and decreases costly complications for the patient and the NHS.

References

1. Mortimer PS, Rockson SG. (2014) New developments in clinical aspects of lymphatic disease. *J Clin Invest* 2014; 124: 915– 21.
2. Moffatt CJ, Franks PJ, Doherty DC et al. (2003) Lymphoedema: an underestimated health problem. *Q Journal Medicine*, 92: 731-38.
3. Wounds UK Best Practice Statement. Compression Hosiery. (2015). second edition. London: Wounds UK. www.wounds-uk.com
4. Moffatt CJ, Keeley V, Franks PJ, et al. (2017) Chronic oedema: a prevalent health care problem for UK health services. *Int Wound J*. 14 (5):772–781. https://doi.org/10.1111/iwj.12694
5. Lymphoedema Network Wales, End of Year Report 2018-2019.
6. Skills for Practice: Management of Chronic Oedema in the Community - 2009. *Wounds UK*, Aberdeen
7. Mortimer PS. (2021) Cellulitis in Chronic Oedema, *British Journal of Dermatology,* 10.1111/bjd.20047 Wiley Online Library
8. Burian EA, Karlsmark T, Franks PJ, et al. (2021) Cellulitis in chronic oedema of the lower leg: an international cross-sectional study - *British Journal of Dermatology* https://doi.org/10.1111/bjd.19803
9. Posnett J, Franks PJ. (2008) The burden of chronic wounds in the UK. Nursing Times; 104: 3, 44-45.
10. Moffatt CJ, Gaskin R, Sykorova M, et al. (2019) Prevalence and risk factors for chronic edema in UK community nursing services. *Lymphatic Research and Biology*, 17, 2 doi 10.1089/lrb.2018.0086.
11. Morgan K, Thomas M. (2018) The development of a 'wet leg' pathway for chronic oedema. *International Journal of Palliative Nursing* | Vol. 24 | No. 1 | pp 40–46 https://doi.org/10.12968/ijpn.2018.24.1.40
12. Thomas M, Morgan K, Lawrence P. (2021) Introducing the new Chronic Oedema Wet Leg Pathway. Chronic Oedema in *British Journal of Community Nursing* October 2021 16-21.
13. Smith, A. & Punshon, G., 2021. International Community Nursing Observatory: *District Nursing Today.* [Online] Available at: https://www.qni.org.uk/wp-content/uploads/2019/11/District-Nursing-Today-The-View-of-DN-Team-Leaders-in-the-UK.pdf
14. Moffatt C, Pinnington L. Project evaluation report: facilitating development of community based lymphoedema services through clinical education (2012) Available from: http://eastmidlandsletb.net/Resources/Documents/Engaging%20for%20Innovation/Evaluations/Lymphoedema.pdf
15. Thomas MJ, Morgan K, Humphreys I et al. (2020) The benefits of raising awareness of lymphoedema among care home staff. *British Journal of Nursing*.29:4 190-198
16. Guest JF, Ayoub N, Mcllwraith T et al. (2015) Health economic burden that wounds impose on the National Health Service in the UK. *BMJ Open* e009283. https://doi.org/10.1136/bmjopen-2015-009283
17. Welsh Government (2010) Strategy for lymphoedema – Designed for Lymphoedema Welsh Government, Cardiff.
18. Welsh Government, (2019). Review of the impact of loneliness and social isolation on health and wellbeing and whether people who experience loneliness/social isolation have higher use of public services, Cardiff: Government Social Research.

19. Thomas M, Coveney E, Pike C et al. (2020) Exploring the impact of lymphoedema on individuals and if lymphatic venous anastomosis surgery effects perceptions on quality of life: a qualitative study. *Eur J Oncol Nurs*. 44:101720 https://doi.org/10.1016/j.ejon.2019.101720
20. Gabe-Walters M, Thomas M. (2021) Development of Patients Reported Outcome Measure LYMPROM. *British Journal of Nursing* 30,10.
21. Lam R, Wallace A, Burbidge B. et al. (2006) Experiences of patients with Lymphoedema. *J Lymphoedema,* 1(1): 16-21.
22. Lewis MJ, Morgan, K. Managing chronic oedema: a collaborative community approach. (2008) *British Journal of Community Nursing*. Chronic oedema supplement. April 25-32.
23. Lymphoedema Framework. Best practice for the management of lymphoedema. International consensus. 2006 London: MEP Ltd;
24. Humphreys I, Thomas M, Morgan K. (2017) Pilot evaluation of the management of chronic oedema in community settings project. *British Journal Community Nursing* Vol 22, No 12.
25. Jehu D, Jenkins L, Morgan K, Thomas. M. (2018) Taking a proactive approach to mild to moderate chronic oedema: a case study. *British Journal Community Nursing* Vol 23, No 2
26. Watts T. (2017) Chronic oedema 'on-the-ground' education programme. *British Journal Community Nursing* Vol 22, No 11.
27. British Lymphology Society (2018) Assessing vascular status in the presence of chronic oedema prior to the application of compression hosiery: Position Document to guide decision making. Available at https://www.thebls.com/public/uploads/documents/document-95871580220184.pdf (accessed 16.06.2021)
28. Wounds UK Best Practice Statement. Compression Hosiery. (2021) Third edition. 2021/ London: Wounds UK. www.wounds-uk.com
29. National Wound Care Strategy Programme (2020) Lower limb recommendations for clinical care, NWCSP, UK. Available at https://www.ahsnnetwork.com/wpcontent/uploads/2020/11/Lower-imbRecommendations-20Nov20.pdf
30. Stephen-Haynes, J. & Callaghan, R. (2016) Options for Compression dressings. *Practice Nurse*, 46 (7): 20-25
31. NICE, 2021. How should i interpret ankle brachial pressure index (ABPI) results? [Online] Available at: https://cks.nice.org.uk/topics/leg-ulcer-venous/diagnosis/interpretation-of-abpi/
32. NICE, 2021. Leg ulcer- venous: how common is it? [Online] Available at: https://cks.nice.org.uk/topics/leg-ulcer-venous/background-information/prevalence/
33. Partsch, H. & Mortimer, P. (2015). Compression for leg wounds. BJD.173:359-369.
34. Partsch H Flour M, Smith PC, Coleridge, (2008) Indications for compression therapy in venous and lymphatic disease consensus based on experimental data and scientific evidence under the auspices of the IUP. 2008, International Angiology 27(3)193-219
35. National Leadership and innovation for agency for health care (NLIAH), 2010. All Wales Guidelines for Delegation Cardiff: Morgan-Cole.

Appendix 1

The Chronic Oedema Wet Leg Pathway©

Patient has chronic oedema and lymphorrhoea

Does the limb have clinical signs of cellulitis?
- Unilateral, rapid onset red/spreading erythema
- Hot/painful oedematous skin
- Blisters
- Patient systemically unwell (flu-like symptoms)

NO

YES

Refer patient to GP or local non-medical prescriber following local Antimicrobial Guidance.

Clean and dry leg effectively using appropriate method. Moisturise with appropriate emollient and if pain allows apply:
Level One Support.
Once cellulitis starts improving increase level of compression as appropriate

Refer to local Lymphoedema Service if available

LEVEL ONE: Support only - protect and comfort

1. An ABPI/TBPI is not required.
2. Wash and dry leg using appropriate method and cleanse wound/remove exudate if needed.
3. Moisturise with suitable emollient.
4. Apply wound dressings/absorbent pads as per local formulary.
5. Apply layer of tubular stockinet (blue/yellow/beige line based on size of limb).
6. Apply undercast wool padding (at least 3), ensuring a cylindrical shape is achieved and bony prominences are covered and protected. Start at the base of the toes to just below knee.
7. Cover with a final layer of tubular stockinet (blue/yellow/beige line).
8. Apply toe bandages if toes are oedematous. See Lymphoedema/Chronic Oedema Toe Bandaging Care Plan. Or consider using toe caps.

Re-assess at each bandage change and act accordingly - consider Level Two or Three

LEVEL TWO: Follow above instructions and then…

9. Apply one layer of short stretch inelastic bandage or a cohesive bandage (i.e. Actico 8cm + 10cm width) stretched in a spiral application, starting at the base of the toes to below knee, using a 50% overlap.

Re-assess at each bandage change and act accordingly - consider Level Three- Four or administer compression garments

LEVEL THREE: Follow instructions for Level Two and then…

Ensure an arterial assessment is completed.

10. Apply a second layer of short stretch inelastic bandage or a cohesive bandage (i.e. Actico 8cm + 10cm width at full stretch in an opposite spiral application from the base of the toes to just below the knee with a 50% overlap up to the knee.

Re-assess at each bandage change and act accordingly- consider Level Four or administer compression garments

LEVEL FOUR:

11. If the patient's oedema or lymphorrhoea is not improving, then collaborate with the local lymphoedema service to increase the layers of short stretch inelastic bandage or a cohesive bandage. The service can also support and advise on compression for oedema in knees and thighs.

The main aim is to reduce oedema, heal wounds and stop lymphorrhoea. Once this has been achieved compression garments must be worn daily.

Appendix 2

Chronic Oedema Wet Leg Management Plan

PATIENT NAME:	DATE OF BIRTH:	THERAPIST NAME :	DATE:

Level	Products Required	Instructions
Level One (Support/Comfort)	• Two pieces of Blue/Yellow/ Beige tubular stockinet Liner • Minimum of 3/4 rolls of undercast wool padding • Wound dressing (if appropriate)	1. An ABPI/TBPI is not required. 2. Wash and dry leg using appropriate method and cleanse wound/remove exudate if needed. 3. Moisturise with suitable emollient. 4. Apply wound dressings/ absorbent pads as per local wound formulary. 5. Apply layer of tubular stockinet (Blue/Yellow/Beige line based on size of limb). 6. Apply undercast wool padding, ensuring a cylindrical shape is achieved and bony prominences are covered and protected. Start at the base of the toes to just below knee. 7. Cover with a final layer of tubular stockinet (Blue/Yellow/Beige line). 8. Apply toe bandages if toes are oedematous. See Lymphoedema/Chronic Oedema Toe Bandaging Care Plan. Or consider using toe caps. **Re-assess at each bandage change and act accordingly - consider Level Two or Level Three**
Level Two (Reduced Compression) (Therapeutic Compression)	As above and add • Short stretch inelastic bandage (8cm x 1 roll + 1/2 rolls of 10cm width) x 2/3 rolls	Follow above instructions and then… 9. Apply **one** layer of short stretch inelastic bandage or a cohesive bandage (i.e. Actico 8cm around foot and 10cm width around calf stretched in a spiral application, starting at the base of the toes to below knee using a 50% overlap. **Re-assess at each bandage change and act accordingly - consider Level Three or Level Four or apply compression garments**
Level Three (Optimum Compression)	As above and add • Short stretch inelastic bandage (10cm width) x 4/6 rolls	Follow instructions for level 2 and then… 10. Ensure an **arterial assessment** is completed. 11. Apply a second layer of short stretch inelastic bandage or a cohesive bandage (i.e. Actico **10cm width)** at full stretch in an opposite spiral application from the base of the toes to just below the knee with a 50% overlap **Re-assess at each bandage change and act accordingly - consider Level Four or apply compression garments**
Level Four (Strong Compression)	As above and add • Short stretch inelastic bandage (10cm width) x 6/8 rolls	12. If the patient's oedema or lymphorrhoea is not improving, then collaborate with the local lymphoedema service to increase the number of layers of short stretch inelastic bandage or a cohesive bandage. The service can also support and advise on compression for oedema in knees and thighs. **The main aim is to reduce oedema, heal wounds and stop lymphorrhoea once this has been achieved compression garments must be worn daily.**

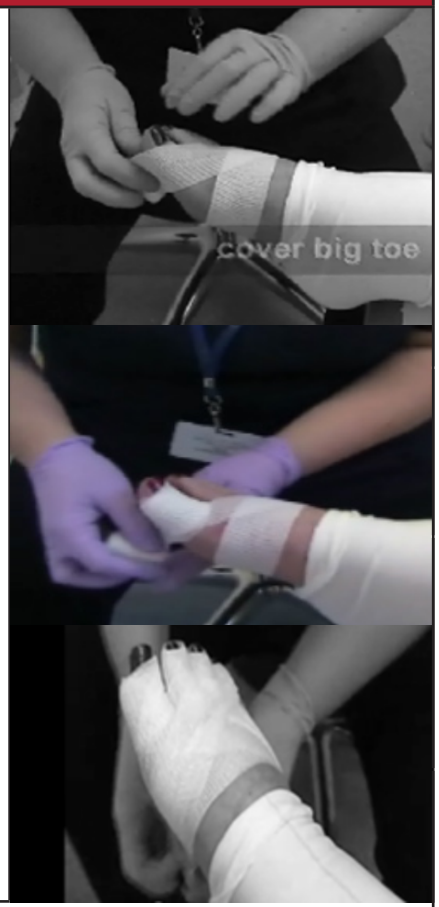
Watch the Wet Leg Video:

Appendix 3

Lymphoedema /Chronic Oedema Toe Bandaging Care Plan

PATIENT NAME:	DATE OF BIRTH:	NURSE NAME:	DATE:

Presentation	Products required	Instructions
Oedematous and/or Lymphorrhoea in dorsum/toes	• 4cm non-conforming bandage (i.e. Hospiform, K band or Mollelast	1. Clean and dry toes and feet effectively using appropriate method. Cleanse wound/remove exudate. 2. Avoid applying moisturiser between toes prior to bandaging. 3. Inspect web spaces for maceration, fissures and athletes foot (tinea pedis) and nail bed for fungal infections. Treat accordingly. 4. Apply 4cm non-conforming bandage by anchoring at the base of toes with a loose turn to individually wrap each toe until bandage is opaque and the toe is covered. This bandage may be folded in half if required. 5. While applying the bandage to each toe ensure the length of the toe is covered, but the toe nail is visible for inspection. Do not bandage the little toe as it rarely swells. This care plan can be used in conjunction with the **Chronic Oedema Wet Leg Management Plan** (Appendix 2)



**REFER TO LOCAL LYMPHOEDEMA SERVICE FOR ONGOING ADVICE AND SUPPORT

Appendix 4

Compression Garment Guidance based on Lymphoedema Wales Formulary 2022

Type of Lymphoedema	Type of garment	Other options
At Risk of Lymphoedema No evidence of swelling, however people who are immobile, morbidly obese, do not go to bed, have venous disease, repeated cellulitis may benefit from a class 1 compression garment. Leg shape is normal.	British Standard or lower compression up to 17mmhg - **Medi UK Duomed** (circular knit) class 1	
Mild Lymphoedema (minimal swelling) limb shape can be normal – when you press the oedema can pit, swelling can also be present in just one area on the limb (for example ankles) socks leave a mark when removed. On elevation swelling can reduce. (Men's' garments offer larger foot sizes).	British Standard or lower compression up to 17mmhg - **Medi UK Duomed (circular knit) class 1 or 2 Haddenham Pertex light. (Flat knit class 1)**	Men's Garments - heavy duty - **BSN Jobst Men Ambition or Juzo Adventure Rib class 1 or 2.** Circular knit but sheer fabric- **BSN Jobst Ultrasheer**
Moderate Lymphoedema (moderate swelling). Swelling stays in situ even with elevation. Pitting is obvious, patients report heaviness and aching in the legs.	Circular knit fabric - **BSN Jobst Ultra sheer (Class 1 or 2)**	Circular knit firmer/denser fabric **Sigvaris Cotton or Comfort (Class 1 or 2)** If limb distorted, may need flat knit garments
Severe Lymphoedema (severe swelling). Significant swelling with obvious limb shape distortion. As well as pitting there can be areas that are fibrosed (hard solid tissue). Toe and foot swelling can also occur as well as swelling extending to the knees and thighs (If oedema extending into thigh, check for genital oedema)	Work with local lymphoedema service. Flat knit garments tend to work best for people with severe or complex lymphoedema.	May need made to measure garments/ or compression wraps
Complex Lymphoedema Significant swelling with skin changes including fibrosis, peau d'orange, papillomatosis, hyperkeratosis, skin folds and cellulitis. (If oedema extending into thigh, check for genital oedema)	Work with local lymphoedema service. Flat knit garments tend to work best for people with severe or complex lymphoedema. Layering of garments can be effective. Collaboration is key.	May need made to measure garments/or compression wraps
Complex with wound/leaking lymphorrhoea Patient has lymphoedema and a wound/or 'wet legs' with leaking lymphorrhoea. The open wound can be superficial or complex but requires dressings and compression.	Work with local lymphoedema service. Depending on leg shape, consider a garment instead of bandaging. Products such as **Medi UK Duomed (circular knit) class 1 or 2 or Haddenham Pertex light (flat knit) or a compression wrap can be used**	

****COLLABORATE WITH LOCAL LYMPHOEDEMA SERVICE FOR ONGOING ADVICE AND SUPPORT**

Appendix 5

GUIDANCE FOR READY TO WEAR COMPRESSION GARMENTS

Compression Class	Pressure	Compression Descriptor
British or lower compression	Up to 17mmhg	Light support
Class 1 European/ British class 2	18-21/24mmhg	Mild
Class 2 European	22/23-32mmhg	Moderate
Class 3 European	33/34-46mmhg	Strong
Class 4 European	47/49+mmhg	Very strong

Men's garment, below knee, class 2 (BSN Jobst for Men Ambition, Circular Knit)

Indications –These compression garments are suitable for people who require a reinforced and/or garment to accommodate a larger foot size. Usually provided for mild to moderate oedema. If two garments are provided then these garments should last 9-12 months if worn daily.

Shoe size
Regular – 37-44
Long – 40-48

1	2	3	4	5	6
28-34	31-38	34-41	37-46	40-49	42-52
30-36	32-40	34-43	38-47	40-50	43-53
23.5-27.5	26-30.5	28.5-33	31-36.5	33.5-39	35.5-41.5
18-20	20-22	22-24	24-26	26-28	28-30
26-31	28-33	29-35	31-37	32-38	33-40
17-22	19-24	21-26	23-29	25-32	27-34

Black Dark Grey Brown Navy Khaki

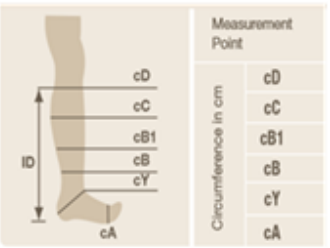
Circular Knit Compression Garments

Medi Duomed Soft Class 1 & 2 (Circular Knit)

Indications – This garment is suitable for patients with mild oedema and those who struggle to apply normal compression stockings. They can be used as a first line garment to build up tolerance and concordance to compression therapy. Many people with Lipoedema find these garments very supportive. Duomed can also be used as a second layer over a flat knit garment to provide more compression for severe/complex oedema. Can also be considered for patients with superficial wounds/oedema over the wound dressing to manage oedema and promote wound healing. If two garments are provided then these garments should last 3-6 months if worn daily.

Circumference (in cm)

Sizes	S	M	L	XL	XXL
cG Thigh	42–57	48–64	54–71	60–78	66–85
cC Calf	28–34	32–38	36–42	40–46	44–50
cB Ankle	19–21	22–24	25–27	28–30	31–34



Flat Knit Compression Garments

Haddenham Pertex Light Class 1 (Flat Knit)

Indications — Can be used for all types of lymphoedema/chronic oedema where skin and soft tissue requires stiffness of the material without the need for high levels of compression. Pertex light can also be considered if donning or doffing garments is too difficult. **Due to the fabric softness you must decrease the size of the garment by at least 1 size.** Available in a variety of styles including long foot/ long leg/ extra wide calf/ closed toe/ open toe and with or without a grip top and should always be considered prior to a made to measure flat knit compression garment. Consider use for patients with superficial wounds/oedema over the wound dressing to manage oedema and promote wound healing. If two garments are provided then these garments should last 9-12 months if worn daily

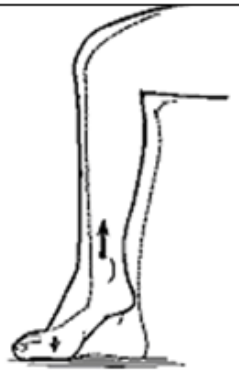
	Circumferences cm	4	5	6	7	8	9	10	11	12	13	14	15
EXTRA WIDE	g THIGH TOP	46-65	48-68	50-71	52-74	54-77	56-81	58-85	60-89	62-93	64-98	66-103	68-108
	f MID THIGH	42-57	44-60	45-63	47-66	48-69	50-72	51-75	53-78	54-81	56-84	57-88	59-92
	d CALF	29-40	31-42	32-44	34-46	35-48	37-50	38-52	40-54	41-56	43-59	44-62	46-65
	c MID CALF	31-39	33-41	34-43	36-45	37-47	39-49	40-51	42-53	43-55	45-58	46-61	48-64
STANDARD WIDTH	g THIGH TOP	44-53	46-56	48-59	50-62	52-65	54-69	56-73	58-77	60-81	62-86	64-91	66-96
	f MID THIGH	41-47	43-50	44-53	45-56	47-59	48-62	50-65	51-68	53-71	54-74	56-78	57-82
	d CALF	28-32	30-34	31-36	33-38	34-40	36-42	37-44	39-46	40-48	41-51	43-54	44-57
	c MID CALF	29-33	31-35	33-37	35-39	36-41	38-43	39-45	41-47	42-49	44-52	45-55	47-58
	b ANKLE	19-21	20-22	21-23	22-24	23-25	24-26	25-27	26-28	27-29	28-31	29-33	30-36

Appendix 6

Leg Exercises to encourage Lymph Drainage

Repeat 10 times both sides; you can increase the number of repetitions as you get stronger. Consider referral to local physiotherapy department.

Roll your foot in a circle. Repeat in the opposite direction

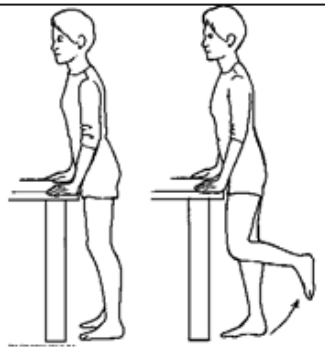


Place your foot flat on the floor. Tap your heels

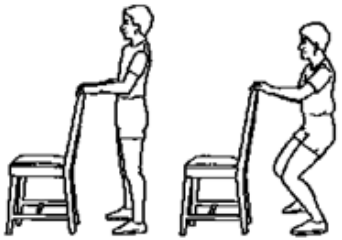
Sit with your feet down. Straighten and bend your knee

Follow the link to follow a short exercise class:
www.medic.video/w-lymph

Stand holding on to a firm surface (e.g. table). Lift one foot off the floor as high as you can. Slowly lower down



Bend your knee, lifting your foot behind you and lower



Slowly bend both your knees and then slowly stand up

Any questions?

If you have any questions, please contact:

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