






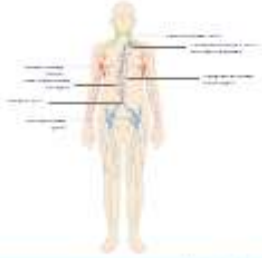

The Management of Secondary Lymphoedema in General Practice - Transcription

Time code	Audio		Video Slide
00:00		1	 <p>The Management of Secondary Lymphoedema in General Practice October 2018</p>
00:06	<p>Hello everyone, my name is Sue Hodson and I'd like to welcome you to this webinar about the management of Secondary Lymphoedema.</p> <p>My background is that I am a GP and I've worked in Lymphoedema since 2003.</p> <p>Currently I work in the lymphoedema clinic at Ballarat Health and the lymphoedema service at Monash Health, both in Victoria.</p>	2	 <p>Presented by: Dr. Susan Easton General Practitioner Medical Officer, Lymphoedema Services - Ballarat Health - Monash Health</p>
00:34	<p>The National Breast and Ovarian Cancer Centre (NBOCC) has developed a guide in 2008 to assist general practitioners (GPs) and other health professionals in the diagnosis and management of secondary lymphoedema. This has been reviewed and updated in 2018 to reflect the latest evidence-based management guidelines.</p> <p>This presentation consists of some preliminary slides providing basic information about the incidence and risk factors, and then two case studies will be discussed during which we will refer to the guide.</p> <p>A copy of the power point slides can be downloaded from the HealthPathways website and from the VPHNA website.</p>	3	<p>The management of Secondary Lymphoedema</p> <p>Part 1: Introduction and Definition of Lymphoedema Part 2: Case 1 – Jenny with breast cancer related lymphoedema Part 3: Case 2 – Alan Lymphoedema and Diabetes Part 4: Summary and Resources</p>
01:22	<p>Before we begin I would like to state that –</p> <p>We are committed to supporting reconciliation between Indigenous and non-Indigenous Australian people. In keeping with the spirit of Reconciliation, we acknowledge the Aboriginal and Torres Strait Islander Peoples as the Traditional Owners of the lands. We wish to pay respect to their Elders – past, present and emerging – and acknowledge the important role Aboriginal and Torres Strait Islander people continue to play within our community.</p>	4	<p>Acknowledgment to Country</p> <p>We are committed to supporting reconciliation between Indigenous and non-Indigenous Australian people. In keeping with the spirit of Reconciliation, we acknowledge the Aboriginal and Torres Strait Islander Peoples as the Traditional Owners of the lands. We wish to pay respect to their Elders – past, present and emerging – and acknowledge the important role Aboriginal and Torres Strait Islander people continue to play within our community.</p>
2:01	<p>Part 1 is an Introduction and some definitions that we use in Lymphoedema.</p>	5	<p>Part 1: Introduction & Definition of Lymphoedema</p>




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<p>02:10</p>	<p>Our key messages today are that:</p> <ul style="list-style-type: none"> • Early diagnosis improves outcome, and • Education to support self-management is vital • Self-management can reduce symptom severity and improve quality of life • Lymphoedema causes changes in the skin. So good skin care is essential. • Skin infections require urgent treatment • Presenting symptoms in lymphoedema may be vague <p>Although lymphoedema may not be a common presenting problem in general practice, GPs have a key role to play in its management.</p> <p>It's important that GPs are proactive when seeking patients at risk.</p>	<p>6</p>	<p>Key messages</p> <ul style="list-style-type: none"> • Early diagnosis improves outcomes • Education to support self-management is vital • Self-management can reduce symptom severity and improve quality of life • Lymphoedema causes changes in the skin. Good skin care is essential. • Skin infections require urgent treatment • Presenting symptoms may be vague
<p>03:01</p>	<p>Red flags.</p> <p>At the onset lymphoedema, or when there is an unexpected increase in swelling consider the red flags of: Cellulitis, Venous Thrombosis, or Cancer - onset or recurrence.</p>	<p>7</p>	<p>Red Flags</p> <ul style="list-style-type: none"> • At the onset lymphoedema, or when there is an unexpected increase in swelling consider: <ul style="list-style-type: none"> * Cellulitis * Thrombosis * Cancer - onset/recurrence
<p>03:18</p>	<p>Today, we are talking about Secondary Lymphoedema.</p> <p>Lymphoedema is a regional accumulation of excessive amounts of protein-rich fluid in the body tissue causing swelling.</p> <p>Secondary lymphoedema may occur following treatment for cancer, including surgery or radiotherapy if the lymphatic system is damaged.</p> <p>A normally functioning lymphatic system pumps 2 to 4 litres of lymph daily. About 100ml of lymph is drained from each arm, and 200-300ml from each leg daily. If the lymph nodes in any part of the body are removed, damaged or affected by cancer, lymph drainage is reduced. Imagine the impact on a limb if there is a blockage given this amount of fluid.</p>	<p>8</p>	<p>Definition</p> <ul style="list-style-type: none"> • Lymphoedema: the regional accumulation of excessive amounts of protein-rich fluid in the body tissue causing swelling • Secondary lymphoedema may occur following treatment for cancer including surgery or radiotherapy if the lymphatic system is damaged.
<p>04:16</p>	<p>Damage to the axillary or inguinal/iliac nodes may affect drainage of the upper or lower limbs, while damage to the submaxillary or cervical nodes may affect the head and neck.</p> <p>Lymph moves through the lymphatic system by a combination of the pressure gradient produced by muscle contractions and the rhythmic pulsations of the larger lymphatic vessels. The larger lymphatic vessels also contain small valves ensuring the direction of the lymph flow is proximal.</p> <p>Lymphoedema occurs when the rate of accumulation of lymphatic fluid exceeds the drainage capacity of the lymphatic circulation.</p>	<p>9</p>	<p>Lymphatic System</p> 

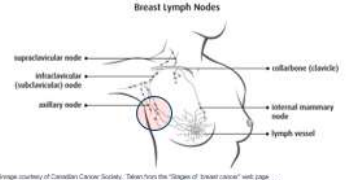
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	Primary lymphoedema occurs due to a congenital abnormality of the lymphatic system.		
5:18	<p>The pitting sign is important in the assessment of lymphoedema. The initial swelling is mainly fluid. But overtime the amount of protein in interstitial space increases. This leads to a change in the texture of the tissues. They become jelly like.</p> <p>Further changes occur in the tissues. Initially fibrotic change, and later deposition of fat. We can see that with the pitting sign.</p> <p>An early pitting sign feels wet , it pits at low pressure and there's rapid refill. Later on, because of the build-up of protein in the interstitial space, the pitting sign is different. It may be slow to pit, the sides are more vertical, and refill is slow. The base of the pit is yellow because of fatty change.</p>	10	<p>'PITTING' – 30 sec firm pressure</p> 
6:24	<p>Pitting itself indicates excess fluids. This photo shows a late stage and what we're seeing is that the dent is persisting long after the thumb is removed and there is a yellow base.</p> <p>This does not look like the acute pitting sign seen in heart failure.</p>	11	<p>PITTING indicates excess fluid</p>  <p>Early stage:</p> <ul style="list-style-type: none"> • Soft pitting • Resolves quickly • Not specific for lymphoedema <p>Late stage:</p> <ul style="list-style-type: none"> • 'Pitting less than expected' • Dent persists • Yellow base (fatty)
6:47	Lymphoedema is related to the area that has been damaged by surgery or radiotherapy. Usually it involves the limbs, but it may involve the head a neck, the breast or the genital regions.	12	
7:02	These photos show changes of Lymphoedema - on the left in breast cancer, where we can see the forearm is enlarged on the right. And the 2nd photo is of gynaecological cancer and there is increased swelling in the right thigh.	13	
7:21	<p>About 20% of cancer survivors who have been treated for:</p> <ul style="list-style-type: none"> • Breast • Gynaecological • Genito-urinary cancers or • Melanoma <p>will develop secondary lymphoedema.</p> <p>The rate is reduced when sentinel node surgery is undertaken. The incidence varies with the different types of cancer, the different surgery and whether or not radiotherapy is included.</p>	14	<p>Incidence</p> <p>Approximately 20% of survivors treated for:</p> <ul style="list-style-type: none"> • Breast • Gynaecological • Genito-urinary cancers or • Melanoma <p>will experience secondary lymphoedema.</p>



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<p>7:49</p>	<p>An important consideration is that the onset of swelling may be delayed for months, even years after the cancer treatment.</p> <p>With breast cancer patients who are closely monitored, 70 to 80% of the patients who develop lymphoedema will be detected in the first 12 months. However, onset may be quite delayed in some patients. A patient may have had initial surgery years ago, but later trauma or surgery put stress on the lymphatic system and trigger lymphoedema.</p> <p>One such example is a patient successfully treated for prostate cancer 8 years prior, with no evidence of lymphoedema. But following hip replacement surgery, presented with lymphoedema of that leg.</p>	<p>15</p>	<p>Delayed Onset of Swelling</p> <ul style="list-style-type: none"> Onset of Secondary lymphoedema may be delayed for months, even years, after cancer treatment 70-80% of breast cancer patients present within the first 12 months 
<p>8:47</p>	<p>The key risk factors for developing lymphoedema after cancer treatment are the type of cancer, the extent of surgery, whether lymph node dissection was performed, and whether there was radiotherapy to the lymph node bed.</p> <p>Episodes of Infection increase the risk of lymphoedema and lymphoedema is more common when there is a high BMI or when there is immobility. Other comorbidities may also have an impact.</p> <p>It is currently unknown whether medical procedures such as injections, and IV cannulations, blood pressure monitoring or excising skin lesions can precipitate lymphoedema. Therefore, as a precaution, we use the untreated limb for these actions when possible. It is always important to ensure that procedures are sterile to minimise risk of infection.</p> <p>Infection increases both the blood flow and lymph production in the affected limb and body part and thus can overwhelm a damaged lymphatic system and precipitate the onset of overt lymphoedema.</p> <p>High body mass index increases the amount of fluid in the interstitial spaces and subcutaneous fat deposits make it harder for the calf function to remove fluid.</p> <p>Reducing weight by as little as 5kg can improve the prospect of not developing lymphoedema.</p>	<p>16</p>	<p>Key risk factors</p> <ul style="list-style-type: none"> Type of cancer Extent of surgery Whether lymph node dissection is performed Radiation therapy Infection High body mass index Immobility Comorbidities 
<p>10:31</p>	<p>Early warning signs of the onset of lymphoedema may be vague and may be intermittent. They include feeling of heaviness in the limb or an aching painful tension in the limb that is intermittent.</p> <p>Clothing, jewellery and shoes might feel tighter and these changes may all be transient.</p> <p>These vague intermittent changes may be present for months or years prior to the development of overt lymphoedema.</p>	<p>17</p>	<p>Early warning signs</p> <p>May be vague and intermittent and include</p> <ul style="list-style-type: none"> Feelings of heaviness Aching, pain or tension Tightness or fullness Clothing, shoes or jewellery feeling tighter Transient swelling 

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	Early intervention can reduce the symptom severity in the long term and long-term complications can be reduced. Early intervention with these warning signs can be very helpful.		
11:21	Now I'd like to introduce you to our first case. Jenny has breast cancer related lymphoedema.	18	<p>Part 2: Case 1 – Jenny with breast cancer related lymphoedema</p>
11:29	<p>Jenny is a 52-year-old bank clerk. And she was recently diagnosed with breast cancer. She attended her breast surgeon to discuss her treatment options. One of Jenny's co-workers has lymphoedema. Jenny is concerned about her risk of lymphoedema after cancer treatment. Her general health is excellent. She is physically active and she's not overweight.</p> <p>What options should be considered to reduce Jenny's risk of developing lymphoedema?</p>	19	<p>Case 1: Jenny</p> <ul style="list-style-type: none"> • 52 year old bank clerk • Recently diagnosed with breast cancer • Attends her breast surgeon to discuss treatment options • Co-worker has lymphoedema
12:05	<p>Sentinel lymph node biopsy has a lower risk of lymphoedema compared to axillary node clearance. The decision about the appropriate type of surgery is determined by the outcome of the sentinel lymph node biopsy.</p> <p>Jenny can reduce her risk of lymphoedema by resuming normal activity after surgery.</p> <p>If it's possible to avoid treatment of the axilla by both surgery and radiotherapy, the risk of lymphoedema is further reduced.</p> <p>Breast conserving surgery carries a small risk of lymphoedema of the breast but does not increase the risk of upper limb lymphoedema.</p> <p>Radiotherapy therapy to the breast alone does not increase the risk of lymphoedema in the affected arm. However, lymphoedema may occur in the remaining breast after the radiotherapy.</p>	20	<p>Breast cancer treatment options and reducing risk</p> <ul style="list-style-type: none"> • Sentinel lymph node biopsy versus axillary node clearance reduces incidence to <5% • Resuming normal activity after surgery • Avoid treatment of axilla with both surgery and radiotherapy whenever possible
13:12	<p>This diagram demonstrates sentinel node biopsy.</p> <p>The nodes in the armpit drain both the fluid from the upper arm and the breast region. The sentinel node biopsy can be used when there are small cancers in the breast and no palpable nodes in the armpit. They cause less damage to the arm drainage.</p> <p>At sentinel biopsy, between 1 and 4 nodes are removed. In this surgery, special dye is used to precisely identify which nodes drain the cancer. And this procedure for breast cancer has reduced the frequency and severity of arm lymphoedema.</p> <p>Unfortunately, it can only be used when there is no spread to the armpit lymph nodes. If there has been spread to the axillary nodes,</p>	21	<p>Sentinel node biopsy</p>  <p>The diagram illustrates the lymphatic drainage system in the breast and axilla. It shows the following components:</p> <ul style="list-style-type: none"> supraclavicular node: Located above the clavicle. infraclavicular (subclavicular) node: Located below the clavicle. axillary node: Located in the armpit. collarbone (clavicle): The bone between the neck and shoulder. internal mammary node: Located along the inner edge of the breast. lymph vessel: The network of vessels carrying lymph. <p>Arrows indicate the flow of lymph from the breast and upper arm through the axillary nodes to the supraclavicular and infraclavicular nodes.</p> <p><small>Image courtesy of Canadian Cancer Society. Taken from the "Stages of breast cancer" with page 120. https://www.cancer.ca/cancer-information/your-diagnosis/breast-cancer/stages-of-breast-cancer on 4 October 2015.</small></p>





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	it is necessary to proceed to axillary clearance where more nodes are taken.		
14:19	<p>In the past, women were often advised not to use their arm post-surgery. But Jenny should be encouraged to use her arm and resume her normal activities.</p> <p>This picture is courtesy of Dragons Abreast Australia.</p>	22	
14:36	<p>Jenny's progress: At surgery, her sentinel node was positive, so the surgeon proceeded to perform an axillary clearance. She had a mastectomy.</p> <p>At discharge, her axillary drain was still in situ. She had a meeting, prior to discharge, with the breast care nurse.</p> <p>What specific advice should Jenny receive on discharge?</p> <p>She may experience short-term swelling of her arm following her surgery. This is post-surgical swelling and is not lymphoedema.</p> <p>The other complications of her surgery that she might experience are, a seroma which is a fluid collection, or cording which is a band of tissues that can extend down to the elbow.</p> <p>These two complications of seroma or cording can be discussed with her breast care nurse. They are not lymphoedema.</p>	23	<p>Jenny</p> <ul style="list-style-type: none"> At surgery: <ul style="list-style-type: none"> sentinel node positive axillary clearance performed undergoes mastectomy Discharged with axillary drain in situ Breast care nurse meeting prior to discharge 
15:36	<p>Jenny needs advice about the risk factors that may precipitate lymphoedema in her limb. These risk factors are: injuries, sunburn, bites in her arm, or episodes of infection.</p> <p>She needs to be aware that weight gain increases her risk of developing lymphoedema and keeping her immobile also increases her risk of lymphoedema.</p> <p>The breast care nurse reassured Jenny that the district nurses will manage the drain, and that some swelling in her arm is expected for the first 6 weeks and sometimes fluid, the seroma, may collect in her axilla. The drain itself does not increase her risk of lymphoedema, however infection can.</p> <p>The breast care nurse provided material on secondary lymphoedema and discussed several of the risk reducing strategies.</p> <p>Seroma is common post-operatively and may require aspiration by a breast surgeon. It is not a risk factor for later development of lymphoedema.</p>	24	<p>Management advice</p> <ul style="list-style-type: none"> Risk factors: <ul style="list-style-type: none"> Trauma (bites, sunburn, gardening) Infection Weight management Immobility Early warning signs of lymphoedema Skin care including nails



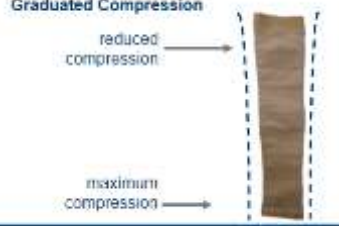




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<p>16:50</p>	<p>It is important to avoid trauma to the affected limb where possible. This means using sunscreen, avoiding bites and wearing gloves in the garden.</p> <p>It is currently unknown whether medical procedures such as IV cannulations, blood pressure monitoring increase the risk of lymphoedema. As a precaution, use the untreated limb for these actions wherever possible.</p> <p>Jenny should be advised about the need for good skin care on her limb including care with her nail bed.</p>	<p>25</p>	<p>Risk reducing strategies</p> 
<p>17:28</p>	<p>Jenny comes in 2 years after her surgery. She remains well and her only regular medication is daily Arimidex.</p> <p>She presents complaining of a tight feeling in her affected non-dominant arm.</p> <p>She is sure that her non-dominant arm is bigger than the other arm and the rings on that hand are tight. She is anxious.</p> <p>What details of her history and examination interest you?</p>	<p>26</p>	<p>Jenny</p> <ul style="list-style-type: none"> • Over the next 2 years Jenny remains well • Only regular medication is daily Arimidex • Presents complaining of a tight feeling in her affected non-dominant arm
<p>18:30</p>	<p>Over the last 2 years, Jenny has gained 7 kg. She's had no recent injury to her arm or infection or long haul air travel. Her symptoms gradually have become more evident of the last 3 to 4 months.</p> <p>Her skin is dry and scaly and when you measure her forearms, there is a limb circumference difference of 2.5cm.</p> <p>The measurement of 2.5 cm disparity between non-dominant and dominant arm is very significant, especially as in this case, non-dominant is greater than dominant arm.</p> <p>Jenny has now developed lymphoedema.</p> <p>She is typical, in that the development of lymphoedema occurred 1 to 2 years after her treatment. The onset was gradual and there was no clear precipitating event in her case.</p> <p>What is your management plan?</p>	<p>27</p>	<p>Jenny</p> <ul style="list-style-type: none"> • Weight gain 7 kg over past 2 years • No recent trauma/infection/air travel • Onset of symptoms gradual over 3-4 months • Her skin is dry and scaly • Limb circumference difference of 2.5cm between the forearms
<p>19:08</p>	<p>Principles of management</p> <p>Jenny has the recent onset of lymphoedema, so we need to consider our red flags.</p> <p>We need to clinically assess for cellulitis and venous thrombosis, and we need to assess whether she has cancer recurrence. This includes palpation of the axilla for new nodes.</p> <p>We would review recent correspondence from her oncologist and consider further imaging.</p>	<p>28</p>	<p>Principles of management</p> <ul style="list-style-type: none"> • Consider red flags <ul style="list-style-type: none"> – Cellulitis, thrombosis, cancer – onset/recurrence • Make a referral to a lymphoedema practitioner • Review her recent oncology report and consider further medical imaging • While waiting for referral: <ul style="list-style-type: none"> – Skin care – Elevate the limb at risk – Gentle slow exercise with a squeeze ball can reduce the swelling • Arrange to review Jenny in one month


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	<p>It's time to make a referral to a lymphoedema service.</p> <p>While waiting for that referral, we would encourage Jenny to begin therapy with good skin care, daily use of moisturiser, elevating her limb while she's resting.</p> <p>We need to emphasise that her increased BMI is a risk factor and encourage stabilisation and if possible weight loss.</p> <p>We need to encourage exercise both to maintain a healthy weight and to assist lymphatic flow.</p> <p>Gentle slow exercise with a squeeze ball can reduce the swelling.</p> <p>Arrange to see Jenny within one month.</p>		
20:32	<p>Assessment Tools in Lymphoedema</p> <p>The most basic tool in every GP's office is the tape measure.</p> <p>The 2 limbs are compared and a difference of 2 cm at the same point on the limb, especially if associated with pitting, indicates lymphoedema.</p>	29	<p>Assessment Tools in Lymphoedema</p> <ul style="list-style-type: none"> • Tape measure • Perometer • Bioimpedance 
20:54	<p>The Perometer is a sophisticated tool that some lymphoedema therapists have. It measures the whole limb and is useful in fitting garments.</p>		
21:04	<p>Bioimpedance measures the increase in interstitial fluid and is a useful tool for the early diagnosis of lymphoedema before the measurement difference is 2 centimeters. This is helpful for patients who are symptomatic but don't have evidence on measurement of lymphoedema at that stage.</p> <p>This group who are symptomatic at a subclinical stage benefit from therapy, and their diagnosis is clarified by the Bioimpedance.</p>		
21:41	<p>Referral for specialist lymphoedema treatment is indicated when a diagnosis of lymphoedema is established by girth difference and with pitting.</p> <p>It is also indicated when there is visible difference between 2 limbs the affected and the non-affected limb, or when the patient is experiencing functional joint or mobility problems because of stiffness in their limb from fluid build-up.</p>	30	<p>Indications for referral for specialist lymphoedema treatment</p> <ul style="list-style-type: none"> • Visible swelling and/or clinical pitting • Obvious discrepancy in limb sizes • Patient experiences functional, joint or mobility problems • Symptoms unresponsive to initial management



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<p>22:11</p>	<p>The therapist has other treatment modalities.</p> <p>Lymphatic massage is a slow, light form of massage designed to assist lymph flow.</p> <p>Lymphatic massage may be performed by the therapist but it's usual to teach patients to do massage on themselves.</p>	<p>31</p>	<p>Specialist Lymphoedema Treatment Options</p> <ul style="list-style-type: none"> • Manual Lymphatic Draining (MLD) also known as "lymphatic massage" • Compression Garments • Bandaging 
<p>22:36</p>	<p>The therapist will also provide compression garments. Compression garments need to be prescribed on the measurements of each patient and compression garments need regular replacement every 4 to 6 months.</p>		
<p>22:51</p>	<p>Compression garments are designed to have graduated compression, with maximum compression in the ankle region and reduced compression moving proximally.</p>	<p>32</p>	<p>Graduated Compression</p> 
<p>23:03</p>	<p>Patients who have severe swelling or misshapen limb, benefit from bandaging prior to supply of compression garments. Sometimes when the skin is very delicate, bandaging is used prior to garment use.</p>	<p>33</p>	<p>Bandaging</p> 
<p>23:19</p>	<p>Compression garments are more practical for long-term use. There is large range of ready-made garments available and also there is access to custom-made garments for unconventional limb shape.</p>	<p>34</p>	<p>Compression Garments</p>  <p> 1. Knee-high, open toe, compression stocking 2. Knee-high, open toe, compression stocking 3. Knee-high, open toe, compression stocking 4. Ankle-high, open toe, compression stocking 5. Ankle-high, open toe, compression stocking 6. Ankle-high, open toe, compression stocking 7. Ankle-high, open toe, compression stocking 8. Ankle-high, open toe, compression stocking 9. Ankle-high, open toe, compression stocking 10. Ankle-high, open toe, compression stocking 11. Ankle-high, open toe, compression stocking 12. Ankle-high, open toe, compression stocking 13. Ankle-high, open toe, compression stocking 14. Ankle-high, open toe, compression stocking 15. Ankle-high, open toe, compression stocking 16. Ankle-high, open toe, compression stocking 17. Ankle-high, open toe, compression stocking 18. Ankle-high, open toe, compression stocking 19. Ankle-high, open toe, compression stocking 20. Ankle-high, open toe, compression stocking 21. Ankle-high, open toe, compression stocking 22. Ankle-high, open toe, compression stocking 23. Ankle-high, open toe, compression stocking 24. Ankle-high, open toe, compression stocking 25. Ankle-high, open toe, compression stocking 26. Ankle-high, open toe, compression stocking 27. Ankle-high, open toe, compression stocking 28. Ankle-high, open toe, compression stocking 29. Ankle-high, open toe, compression stocking 30. Ankle-high, open toe, compression stocking 31. Ankle-high, open toe, compression stocking 32. Ankle-high, open toe, compression stocking 33. Ankle-high, open toe, compression stocking 34. Ankle-high, open toe, compression stocking 35. Ankle-high, open toe, compression stocking 36. Ankle-high, open toe, compression stocking 37. Ankle-high, open toe, compression stocking 38. Ankle-high, open toe, compression stocking 39. Ankle-high, open toe, compression stocking 40. Ankle-high, open toe, compression stocking 41. Ankle-high, open toe, compression stocking 42. Ankle-high, open toe, compression stocking 43. Ankle-high, open toe, compression stocking 44. Ankle-high, open toe, compression stocking 45. Ankle-high, open toe, compression stocking 46. Ankle-high, open toe, compression stocking 47. Ankle-high, open toe, compression stocking 48. Ankle-high, open toe, compression stocking 49. Ankle-high, open toe, compression stocking 50. Ankle-high, open toe, compression stocking 51. Ankle-high, open toe, compression stocking 52. Ankle-high, open toe, compression stocking 53. Ankle-high, open toe, compression stocking 54. Ankle-high, open toe, compression stocking 55. Ankle-high, open toe, compression stocking 56. Ankle-high, open toe, compression stocking 57. Ankle-high, open toe, compression stocking 58. Ankle-high, open toe, compression stocking 59. Ankle-high, open toe, compression stocking 60. Ankle-high, open toe, compression stocking 61. Ankle-high, open toe, compression stocking 62. Ankle-high, open toe, compression stocking 63. Ankle-high, open toe, compression stocking 64. Ankle-high, open toe, compression stocking 65. Ankle-high, open toe, compression stocking 66. Ankle-high, open toe, compression stocking 67. Ankle-high, open toe, compression stocking 68. Ankle-high, open toe, compression stocking 69. Ankle-high, open toe, compression stocking 70. Ankle-high, open toe, compression stocking 71. Ankle-high, open toe, compression stocking 72. Ankle-high, open toe, compression stocking 73. Ankle-high, open toe, compression stocking 74. Ankle-high, open toe, compression stocking 75. Ankle-high, open toe, compression stocking 76. Ankle-high, open toe, compression stocking 77. Ankle-high, open toe, compression stocking 78. Ankle-high, open toe, compression stocking 79. Ankle-high, open toe, compression stocking 80. Ankle-high, open toe, compression stocking 81. Ankle-high, open toe, compression stocking 82. Ankle-high, open toe, compression stocking 83. Ankle-high, open toe, compression stocking 84. Ankle-high, open toe, compression stocking 85. Ankle-high, open toe, compression stocking 86. Ankle-high, open toe, compression stocking 87. Ankle-high, open toe, compression stocking 88. Ankle-high, open toe, compression stocking 89. Ankle-high, open toe, compression stocking 90. Ankle-high, open toe, compression stocking 91. Ankle-high, open toe, compression stocking 92. Ankle-high, open toe, compression stocking 93. Ankle-high, open toe, compression stocking 94. Ankle-high, open toe, compression stocking 95. Ankle-high, open toe, compression stocking 96. Ankle-high, open toe, compression stocking 97. Ankle-high, open toe, compression stocking 98. Ankle-high, open toe, compression stocking 99. Ankle-high, open toe, compression stocking 100. Ankle-high, open toe, compression stocking </p> 
<p>23:35</p>	<p>Special exercises have been developed to encourage lymphatic flow and these are practiced, as well as general strength and fitness exercises.</p>	<p>35</p>	<p>Improve lymphatic flow</p> <ul style="list-style-type: none"> • Special exercises • General strength and fitness exercises 

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23:48	<p>This management flowchart has been prepared for GPs. It includes the features of history and examination, which need to be considered. There is advice about early intervention for patients who are at risk and advice about treatment and management. It can be used as a reference at any stage in the assessment of patients with secondary lymphoedema.</p>	36	
24:16	<p>We'd like to introduce Alan. Alan is our 59-year old school bus driver.</p>	37	<p>Part 3: Case 2 – Alan Lymphoedema and Cellulitis</p>
24:22	<p>His temperature is 38.7 his heart rate is 84.</p> <p>The background is that Alan had melanoma surgery including left inguinal node clearance 12 months ago. His current medications are Plendil and Lipitor.</p> <p>He lives in a small farming community.</p> <p>Alan has presented with a recent onset of leg swelling, which in the context of his surgery 12 months ago for melanoma involving node surgery, is likely to be lymphoedema.</p>	38	<p>Case 2: Alan</p> <p>59 year old school bus driver</p> <ul style="list-style-type: none"> • Melanoma surgery including left inguinal node clearance 12 months ago • Current medications: <ul style="list-style-type: none"> – Felodipine (Plandil ER) – Atorvastatin (Lipitor) <p>Presents with left lower limb cellulitis and associated leg swelling</p>
24:59	<p>We consider our red flags again, of cellulitis which is present, but which does not exclude concurrent thrombosis or cancer recurrence.</p>	39	<p>Red flags</p> <ul style="list-style-type: none"> * Cellulitis * Thrombosis * Cancer – onset/recurrence
25:12	<p>Further background on Alan indicates that his BMI is 35. Weight 102 kg, height 170 cm. This is important; we need to modify his antibiotics dose, doubling it, because his weight is over a hundred kilograms. We need to test for diabetes.</p> <p>Anticipating that Alan now has secondary lymphoedema and is likely to require compression garments, we need to check his peripheral pulses. And if the peripheral pulses are not readily palpable, arrange for an ABI.</p> <p>We need to check for peripheral neuropathy.</p> <p>These factors poor peripheral circulation and peripheral neuropathy are not contraindications for compression garments, but they indicate that special care is required.</p> <p>We also need to do a medication review and we will note that Alan is a bus driver; he is at risk of low activity level. Later, we need to</p>	40	<p>Alan</p> <p>BMI 35 (102 kg, 170 cm height)</p> <ul style="list-style-type: none"> • Modify antibiotic dose because weight > 100 kg • Test for diabetes • Check peripheral pulses. If pedal pulses not readily palpable arrange an ABI • Check for neuropathy (risk factors – possible diabetes, excess alcohol, B12 deficiency) • Medication Review • Bus driver – at risk of low activity. Encourage seated exercises while working, and walking after work.



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	<p>proceed to encourage him with seated exercises while working, and walking after work.</p> <p>Sleep apnoea is important because sufferers may take to sleeping in a chair to alleviate their symptoms. Sleeping in a chair overnight makes leg swelling much worse.</p>		
26:41	<p>We examine Alan and find that his left leg is red and swollen with pitting. The pitting sign suggests that the oedema has been present for some time, probably months. This confirms our diagnosis of secondary lymphoedema.</p>	41	<p>Alan</p> 
27:03	<p>Cellulitis is usually caused by Group A strep and requires treatment with antibiotics. Attacks can be recurrent.</p> <p>Hospital admission for intravenous antibiotics should be considered if he shows signs of septicaemia with hypotension, high fever or tachycardia.</p> <p>Improvement would be expected following 48 hours of therapy. Antibiotic should be commenced as soon as possible after a diagnosis of cellulitis is made.</p> <p>As well as diagnosing cellulitis, we need to look for an entry point for infection. This involves looking for tinea and wounds on the lower limb.</p> <p>His recent onset of swelling means that we arrange a Duplex scan to exclude DVT and a pelvic scan to check for tumour recurrence in the pelvis.</p>	42	<p>Initial management</p> <ol style="list-style-type: none"> 1. Cellulitis <ul style="list-style-type: none"> • Antibiotics, bed rest • Look for tinea, evidence of undiagnosed lymphoedema 2. Recent onset swelling <ul style="list-style-type: none"> • Exclude DVT & tumour recurrence
28:06	<p>When we're doing our medication review, we need to consider the medications which exacerbate peripheral swelling. These include the calcium channel blockers, non-steroidal anti-inflammatories, HRT - Hormone replacement, steroids and some of the oral hypoglycaemic agents.</p> <p>If possible, other medication should be substituted to reduce the peripheral oedema.</p>	43	<p>Medications which may exacerbate peripheral oedema</p> <ul style="list-style-type: none"> • Calcium channel blockers • Non-steroidal anti-inflammatory agents • Hormone replacement therapy • Corticosteroids • Oral hypoglycaemic agents (glitazones)
28:34	<p>Alan presents for a review appointment two weeks later.</p> <p>His cellulitis has resolved, but there is still discrepancy of 5 cm at the mid-calf with the left leg larger than the right.</p> <p>Stemmer's sign is positive on the left. He has ingrown toenails and mild tinea.</p> <p>Stemmer's sign is a test of thickening of the skin at the base of the second toe. This does not show well on the photograph, so I have pinched the skin of the fore foot and it is evident that the fold on the right is narrower than the thickened fold on the left. This is</p>	44	<p>Alan</p> <p>Review appointment 2 weeks later.</p> <ul style="list-style-type: none"> • Cellulitis resolved • Discrepancy of 5cm at the mid-calf • Positive Stemmer's sign on left • Ingrown toenails • Mild tinea 

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	<p>what a positive Stemmer's sign is and relates to the fibrosis that has accumulated in the lymphoedema tissue.</p>		
29:31	<p>When you have cellulitis arising in the context of lymphoedema or chronic oedema, there are 2 components to further management.</p> <p>The first component is management of the swelling of lymphoedema. This includes all the components of lymphoedema management, of education & support, skin care, compression garments, and life-style advice about activity, being active and weight management. Medication review is part of this program</p> <p>The second part of management is reducing the risk factors for a further episode of cellulitis. This involves education about skin, nail and foot care, about daily moisturiser to the skin to improve the barrier action of the skin.</p> <p>Reducing the amount of oedema in the limb by wearing compression garments every day, reduces the risk of a further episode of cellulitis.</p> <p>Patients need to be educated about cellulitis and be educated to attend for prompt treatment if it recurs.</p> <p>Aggressive treatment of tinea and appropriate nail care can halve the risk of a further episode of cellulitis.</p>	45	<p>Lymphoedema management after cellulitis</p> <ol style="list-style-type: none"> Lymphoedema management <ul style="list-style-type: none"> Education & support Advice re skin care & protection Compression garment Life-style advice re activity, exercise & weight Medication review Cellulitis risk reduction education <ul style="list-style-type: none"> Skin, nail & foot care Daily moisturiser Need to wear compression garment to reduce swelling Need to present early if cellulitis returns
31:00	<p>Alan presents 3 months later with second episode of cellulitis, and his leg swelling has increased.</p> <p>What further management can you offer Alan?</p>	46	<p>Alan</p> <p>Alan presents 3 months later with cellulitis and exacerbation of his lymphoedema.</p> <p>What further management can you offer Alan?</p>
31:13	<p>Ongoing Management</p> <p>We need to review Alan's lymphoedema plan and check if he is wearing his compression garment on a daily basis and if he is undertaking skin care.</p> <p>Alan's now had 2 episodes of recurrent cellulitis. From this point on, he can have antibiotics either on hand at home, which he initiates at the start of an episode when he gets early warning signs, or he can go on to long term prophylactic antibiotics when antibiotics are taken daily for 2 years.</p> <p>Alan can tolerate penicillin, but if penicillin allergy is a problem, the antibiotic of choice is Erythromycin.</p> <p>Alan is over 100kg and requires a double dose.</p> <p>Details of the antibiotics for the treatment of cellulitis with</p>	47	<p>Ongoing management</p> <ul style="list-style-type: none"> Review lymphoedema plan & skin care Prophylactic antibiotic therapy <ul style="list-style-type: none"> Phenoxymethylpenicillin 1gm daily or 500mg BD for 6 months initially Refer podiatry under chronic disease management plan <p><small>See Australasian Lymphology Association – Consensus Guidelines Management of Cellulitis in Lymphoedema</small></p>




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	<p>lymphoedema are available on the ALA Guidelines for Management of Cellulitis.</p> <p>It is important to arrange podiatry under chronic disease management plan for Alan who again has ingrown toenails.</p>		
32:29	<p>Alan's lymphoedema therapist has further therapies available to him. His standard management includes skin care, self-massage, lymphoedema specific exercises and general exercises, and daily use of a compression garment.</p> <p>Weight management is important.</p>	48	<p>Standard Management Therapies</p> <ul style="list-style-type: none"> • Skin care • Self massage • Lymphoedema specific exercises • General exercises • Daily use of compression garments • Weight management
32:54	<p>His therapist has further agents available. She can use laser therapy to soften fibrotic tissue and this improves drainage.</p> <p>Studies have focussed on the axilla and suggest a that reduction in both the extent of hardening and swelling of the arm is achievable.</p> <p>But further research is required to validate these treatment doses and the regimes.</p>	49	<p>Other therapies</p> <ul style="list-style-type: none"> • Laser therapy • Pneumatic pumps • Surgery: <ul style="list-style-type: none"> – liposuction – lymphatic reconstruction • Pharmacological therapy • Alternative therapies 
33:22	<p>Pneumatic pumps can be used to reduce the swelling and to reduce the fibrosis in the limb.</p> <p>The Pneumatic pumps have multiple chambers and they are applied to the limb, with the intent of pushing fluid from the affected limb towards the trunk.</p> <p>They are used in combination with bandages or garments to maintain any reduction achieved.</p> <p>When used inappropriately, they can worsen lymphoedema and they can cause genital swelling.</p>		
34:04	<p>At the moment, there are no pharmacological agents available for lymphoedema. Diuretics are not effective in lymphoedema and in fact, can increase the protein build up.</p> <p>Liposuction has a very small role in lymphoedema swelling. It reduces the size of a limb but can only be effective when it's combined with garment use 24/7 after surgery. It's only applicable to a small group of patients.</p> <p>Lymphatic reconstruction surgery – microsurgery - is experimental.</p> <p>At this stage, it softens the limb but does not significantly reduce the limb size. There is no evidence currently for alternative therapy such as ultrasound therapy, hyperbaric oxygen, vitamin E,</p>	49	<p>Other therapies</p> <ul style="list-style-type: none"> • Laser therapy • Pneumatic pumps • Surgery: <ul style="list-style-type: none"> – liposuction – lymphatic reconstruction • Pharmacological therapy • Alternative therapies


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	<p>microwave therapy, acupuncture, magnetic field therapy, vibration, hypothermia or aromatherapy.</p> <p>There is no evidence that any of these are effective.</p>		
35:20	<p>The most effective components of lymphoedema management are daily garment wear and weight management.</p>	50	<p>The most effective components of lymphoedema management are daily garment wear and weight management.</p>
35:29	<p>So, our key messages today are about the importance of early diagnosis. The progression of fluid, protein build up, fibrosis, lymphatic deposition means that, late intervention cannot reverse the changes of lymphoedema. We need to treat early.</p> <p>Education to support self-management is vital, and self-management is very effective at reducing symptom severity and improving quality of life.</p> <p>Lymphoedema causes changes in the skin, and good skin care is essential for outcome.</p> <p>Skin infections require urgent treatment.</p> <p>Presenting symptoms in lymphoedema may be delayed and may be vague.</p>	51	<p>Key messages</p> <ul style="list-style-type: none"> • Early diagnosis improves outcomes • Education to support self-management is vital • Self-management can reduce symptom severity and improve quality of life • Lymphoedema causes changes in the skin. Good skin care is essential. • Skin infections require urgent treatment • Presenting symptoms may be vague
36:24	<p>Web based resources</p>	52	<p>Part 4: Summary & Resources</p>
36:28	<p>HealthPathways have comprehensive information about Lymphoedema management in the Australian context.</p> <p>Cancer Australia has good information for patient and professionals about cancer related lymphoedema.</p> <p>The Australasian Lymphology Association is the peak organisation for lymphoedema management in Australia. Their website has information for professionals and clients, and they have a practitioner register where doctors can find a qualified lymphoedema practitioner in their local area. Lymphoedema therapists practice in both the public and private systems but there can be a delay in arranging appointments.</p>	53	<p>Web-based resources</p> <ul style="list-style-type: none"> • HealthPathways • Cancer Australia https://canceraustralia.gov.au/ • Australasian Lymphology Association https://www.lymphoedema.org.au/ – National Lymphoedema Practitioners Register http://www.lymphoedema.org.au/the-register-updated/find-an-ala-accredited-practitioner/

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<p>37:21</p>	<p>I would like to draw attention to local clinical and referral pathways.</p> <p>All Victorian PHNs are progressing work to localise online clinical care pathways. These pathways aim to provide evidenced-based, best practice advice on the assessment and management of specific clinical conditions and referral information, which is unique to each location.</p> <p>Clinical Pathways are an excellent resource for staff and are developed by local GP Clinical Editors in collaboration with subject matter experts from the local hospital networks, community health services, and other service providers.</p> <p>See your local PHN website for more information on clinical and referral pathways.</p>	<p>54</p>	 <p>Web-based resources: Local clinical and referral pathways</p> <p>PHN pathways provide access to evidence-based information regarding conditions and symptoms, and local services and referral information relevant to your general practice.</p> <p>PHN Clinical Pathways (Online Resource)</p> <p>PHN Clinical Pathways provide access to evidence-based information regarding conditions and symptoms, and local services and referral information relevant to your general practice.</p>
<p>38:21</p>	<p>HealthPathways has prepared a lymphoedema GP toolkit. It includes clinical resources, patient resources and education material.</p>	<p>55</p>	 <p>HealthPathways Lymphoedema GP Toolkit</p> <p>A Clinical Resources B Patient Resources C Education</p>
<p>38:33</p>	<p>This webinar has been developed by Eastern Melbourne PHN on behalf of the Victorian PHN Alliance, which is the collective platform for the six PHNs in Victoria.</p> <p>This information is adapted with permission from Cancer Australia.</p> <p>Information contained in this presentation is current as at October 2018.</p>	<p>56</p>	<p>PHN Acknowledgment</p> <p>This webinar has been developed by Eastern Melbourne PHN on behalf of the Victorian PHN Alliance, which is the collective platform for the six PHNs in Victoria.</p> <p>Eastern Melbourne PHN does not take responsibility arising from the use of, or reliance on, this webinar by a third party. Any such use or reliance is the sole responsibility of that party. This webinar does not constitute medical advice. If you require medical advice, please consult an appropriate medical professional.</p> <p>Information contained in this presentation is current as at October 2018 This information is adapted with permission from Cancer Australia.</p>
<p>39:02</p>	<p>Thank you for watching and listening.</p>	<p>57</p>	<p>Acknowledgment of Contributors</p> <p>We wish to gratefully acknowledge the individuals whose contributions have made this material available.</p> <p>Monash Health Lymphoedema Service Susan Hodson, GP / Lymphoedema Medical Officer Joelle Rundell, Advanced Practice Physiotherapist, Clinical Lead Mercy Health Lymphoedema Service Yvonne Zvan, ALA Medical Advisor, Lymphoedema Service Tanya Darro, Manager Physiotherapist Department / Lymphoedema Service Bec Hardman, Senior Therapist Peter MacCallum Cancer Centre Anya Thrill, Head of Occupational Therapy and Physiotherapy</p>
<p>39:06</p>	<p>Feedback and further support regarding this webinar should be directed to your local PHN.</p>	<p>58</p>	<p>Thank you for watching and listening</p> <p>Feedback or further support regarding this webinar should be directed to your local PHN.</p> 

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39:14	This completes the webinar on The Management of Lymphoedema.	59	
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